

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCN0553A1113GAC010

Catalog No: TCN0553A1113GAC010

TerraMAX® Cast Iron Motor, 75 HP, 3 Ph, 50 Hz, 400 V, 1000 RPM, 280M Frame, TEFC



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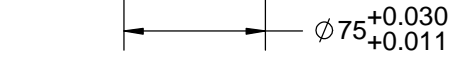
Nameplate Specifications

| | | | |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP | 75 Hp | Output KW | 55.0 kW |
| Frequency | 50 Hz | Voltage | 400 V |
| Current | 101.6 A | Speed | 989 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 94.1 % | Power Factor | 0.83 |
| Duty | S1 | Insulation Class | F |
| Frame | 280M | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 40 °C |
| Drive End Bearing Size | 6317 | Opp Drive End Bearing Size | 6317 |
| 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 | 6 | 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 | 1111 mm | Frame Length | 600 mm |
| Shaft Diameter | 75 mm | Shaft Extension | 140 mm |
| Assembly/Box Mounting | R Side | | |
| Connection Drawing | 8442000085 | Outline Drawing | 0228000972 |

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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. TCN0553A1113GAC010

| 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 | 55 | 75 | 101.6 | 989 | 540.25 | IE3 | - | 94.1 | 94.1 | 93.7 | 0.83 | 0.79 | 0.68 | 6.2 | 1.9 | 2.5 |
| | | | | | | | | | | | | | | | | | | |

| | | | |
|----------------------------------|-----------------------------|---|--|
| Motor type | TCN | Degree of protection | IP 55 |
| Enclosure | TEFC | Mounting type | IM B3 |
| Frame Material | Cast Iron | Cooling method | IC 411 |
| Frame size | 280M | Motor weight - approx. | 616 kg |
| Duty | S1 | Gross weight - approx. | 651 kg |
| Voltage variation * | ± 10% | Motor inertia | 2.6734 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) | 66 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 | 6317 C3 / 6317 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 | 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.

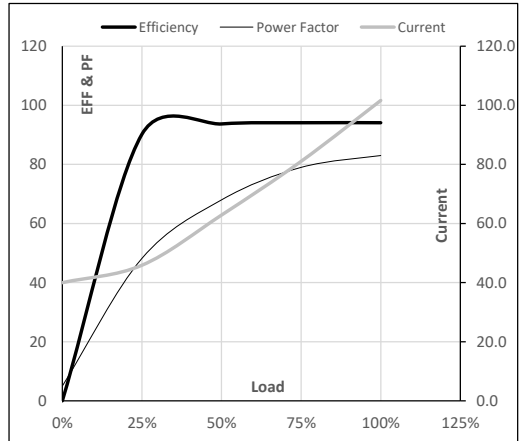
| Efficiency | Europe | China | India | Aus/Nz | Brazil | Global IEC |
|------------|----------------|-------|-------|-----------|--------|----------------|
| Standards | IEC 60034-30-1 | - | - | GEMS 2019 | - | IEC:60034-30-1 |

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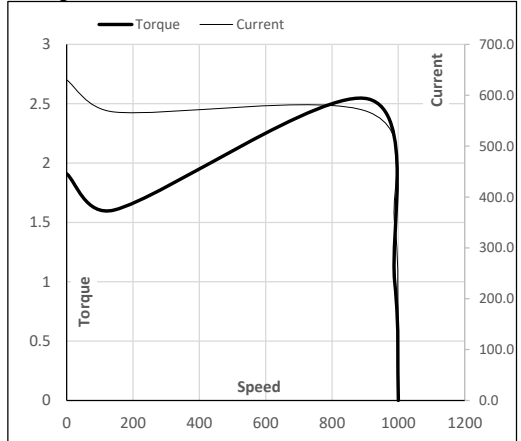
| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [RPM] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg-m ²] | Weight [kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC | 400 | Δ | 50 | 55 | 75 | 101.6 | 989 | 55.09 | 540.25 | IE3 | 40 | S1 | 1000 | 2.6734 | 616 |

Motor Load Data

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current | A | 40.0 | 45.9 | 62.9 | 81.0 | 101.6 | |
| Torque | Nm | 0.0 | 132.1 | 264.9 | 398.5 | 540.3 | |
| Speed | r/min | 1000 | 997 | 995 | 992 | 989 | |
| Efficiency | % | 0.0 | 90.2 | 93.7 | 94.1 | 94.1 | |
| Power Factor | % | 5.0 | 48.2 | 68.0 | 79.0 | 83.0 | |

Performance vs Load Chart

Motor Speed Torque Data

| Load Point | | LR | P-Up | BD | Rated | NL |
|------------|-------|-------|-------|-------|-------|------|
| Speed | r/min | 0 | 143 | 910 | 989 | 1000 |
| Current | A | 630.2 | 567.2 | 346.9 | 101.6 | 40.0 |
| 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

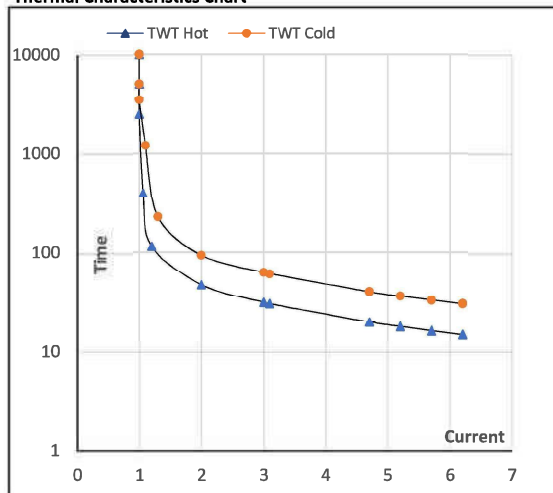
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Model No. TCN0553A1113GAC010

| 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 | 55 | 75.0 | 101.6 | 989 | 55.09 | 540.25 | IE3 | 40 | S1 | 1000 | 2.6734 | 616 |

Motor Speed Torque Data

| Motor speed torque data | | | | | | | | |
|-------------------------|----|-------|----------------|----------------|----------------|----------------|----------------|-----|
| Load | | FL | I ₁ | I ₂ | I ₃ | I ₄ | I ₅ | LR |
| TWT Hot | s | 10000 | 47 | 31 | 23 | 18 | 17 | 15 |
| TWT Cold | s | 10000 | 93 | 60 | 44 | 37 | 34 | 30 |
| Current | pu | 1 | 2 | 3 | 4 | 5 | 5.5 | 6.2 |

Thermal Characteristics Chart

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

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