

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCT7P53A1121GAA001

Catalog No: TCT7P53A1121GAA001

IE3, 7.5kW, DUST IGNITION PROOF MOTORS, 3 phase, 6 Pole, 400V, 976RPM, 50Hz, 89.1%, 160M Frame,
TEFC



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RegalRexnord

Nameplate Specifications

| | | | |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP | 10 Hp | Output KW | 7.5 kW |
| Frequency | 50 Hz | Voltage | 400 V |
| Current | 15.2 A | Speed | 976 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 89.1 % | Power Factor | 0.8 |
| Duty | S1 | Insulation Class | F |
| Frame | 160M | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 40 °C |
| Drive End Bearing Size | 6309 | Opp Drive End Bearing Size | 6209 |
| 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 | 6 | Rotation | Bi-Directional |
| Mounting | B5 | Motor Orientation | Horizontal |
| Drive End Bearing | 2z-C3 | Opp Drive End Bearing | 2z-C3 |
| Frame Material | Cast Iron | Shaft Type | Keyed |
| Overall Length | 622 mm | Frame Length | 254 mm |
| Shaft Diameter | 42 mm | Shaft Extension | 110 mm |
| Assembly/Box Mounting | Top | | |
| Connection Drawing | 8442000085 | Outline Drawing | 0216000524 |

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3

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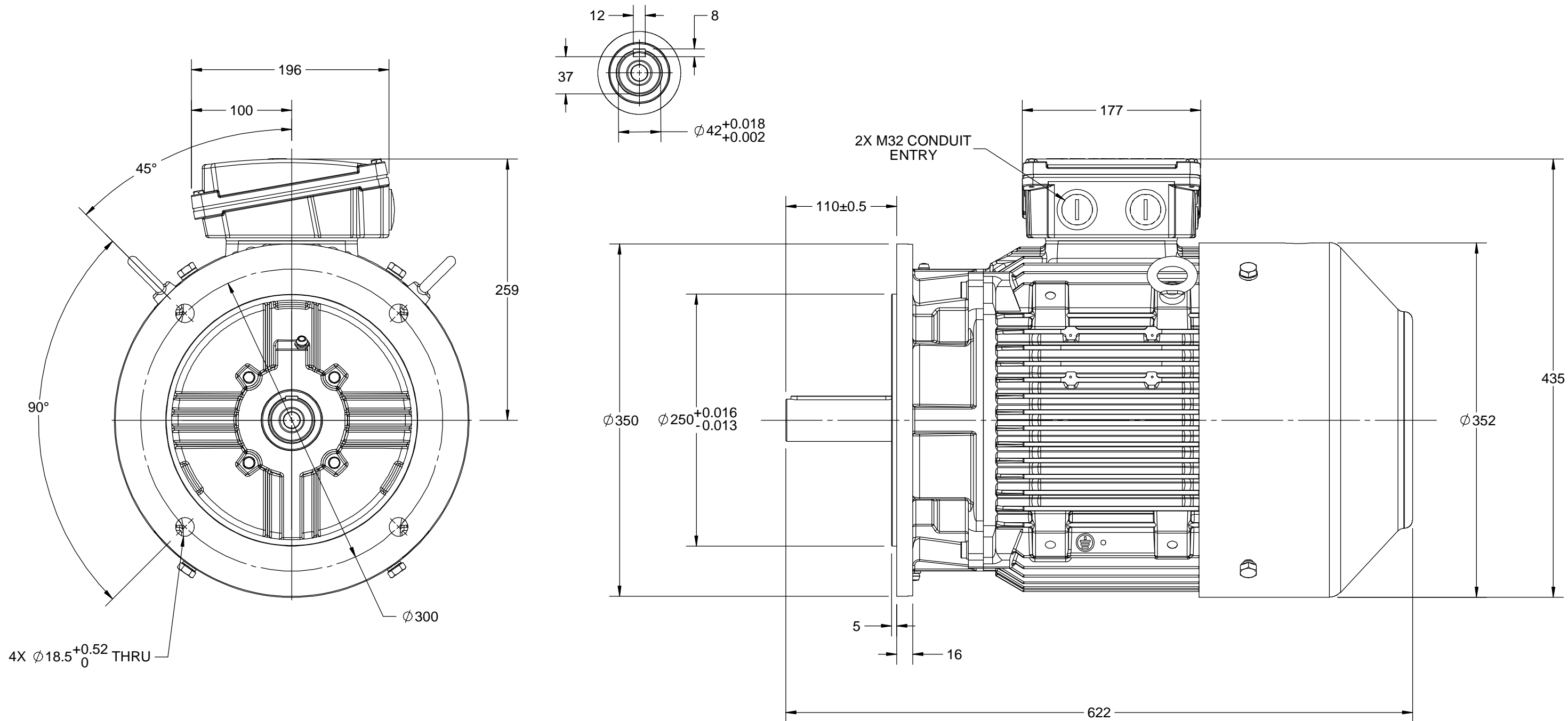
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
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A

A



| | | | | | | | | | | | | |
|---|--|------------------------|--|------------------|--|---------------------------|--------------------|---|--|--|------------------------------|--|
| DRAWING REVISION C | | REVISION BY S.MUDDA | | DATE 3/9/2020 | | <div></div> | DRAWN BY KCS | | <div><div>REGAL™</div>Regal Beloit America, Inc.</div> | | | |
| ECO ECO-0190270 | | APPROVED BY JAY | | DATE 3/9/2020 | | | DATE 19/03/2015 | | | | | |
| ECO DESCRIPTION CONFIGURATIONS ADDED IN THE 3D MODEL | | | | | | | APPROVED BY SBD | | DESCRIPTION <div>OUTLINE</div> 160M-2~8P-B5 | | | |
| | | | | | | | DATE 19/03/2015 | | | | | |
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| | | | | | | THIRD ANGLE PROJECTION | |  | SIZE B | | DRAWING NUMBER 0216000524 | |

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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. TCT7P53A1121GAA001

| 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 | 7.5 | 10 | 15.2 | 976 | 72.98 | IE3 | 5/4FL | FL | 3/4FL | 1/2FL | FL | 3/4FL | 1/2FL | 5.3 | 1.8 | 2.4 |
| | | | | | | | | | | | | | | | | | | |

| | | | |
|----------------------------------|--------------------|---|--|
| Motor type | TCT | Degree of protection | IP 66 |
| Enclosure | TEFC | Mounting type | IM B5 |
| Frame Material | Cast Iron | Cooling method | IC 411 |
| Frame size | 160M | Motor weight - approx. | 141 kg |
| Duty | S1 | Gross weight - approx. | 161 kg |
| Voltage variation * | ± 10% | Motor inertia | 0.1355 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 tb | Standard rotation | Clockwise form DE |
| Zone classification | Zone 21 | Paint shade | RAL 5014 |
| Gas group | Group III | Accessories | |
| Temperature class | T135 | Accessory - 1 | PTC 150°C |
| Rotor type | Aluminum Die cast | Accessory - 2 | - |
| Bearing type | Anti-friction ball | Accessory - 3 | - |
| DE / NDE bearing | 6309-2Z / 6209-2Z | Terminal box position | TOP |
| Lubrication method | Greased for life | Maximum cable size/conduit size | 1R x 3C x 35mm ² /2 X M32 x 1.5 |
| Type of grease | NA | 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 60079-31

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 |

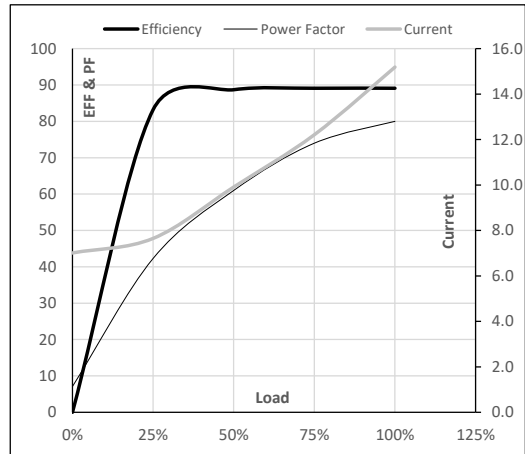
Model No. TCT7P53A1121GAA001

| 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 | 7.5 | 10.0 | 15.2 | 976 | 7.44 | 72.98 | IE3 | 40 | S1 | 1000 | 0.1355 | 141 |

Motor Load Data

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|------|-------|-------|-------|------|-------|
| Current | A | 7.0 | 7.7 | 9.9 | 12.2 | 15.2 | |
| Torque | Nm | 0.0 | 17.9 | 36.0 | 54.4 | 73.0 | |
| Speed | r/min | 1000 | 994 | 989 | 983 | 976 | |
| Efficiency | % | 0.0 | 83.2 | 88.7 | 89.1 | 89.1 | |
| Power Factor | % | 7.1 | 42.3 | 61.0 | 74.0 | 80.0 | |

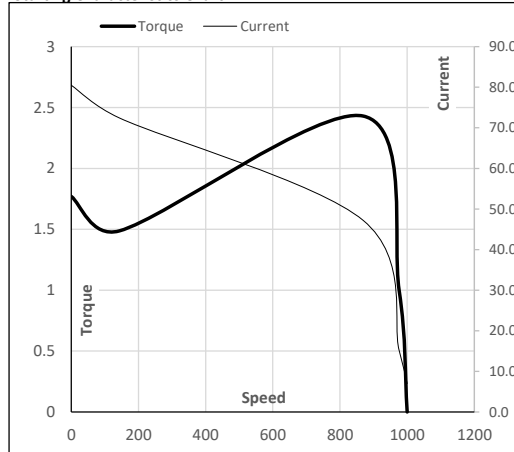
Performance vs Load Chart



Motor Speed Torque Data

| Load Point | | LR | P-Up | BD | Rated | NL |
|------------|-------|------|------|------|-------|------|
| Speed | r/min | 0 | 143 | 869 | 976 | 1000 |
| Current | A | 80.5 | 72.4 | 47.2 | 15.2 | 7.0 |
| Torque | pu | 1.8 | 1.5 | 2.4 | 1 | 0 |

Starting Characteristics Chart



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

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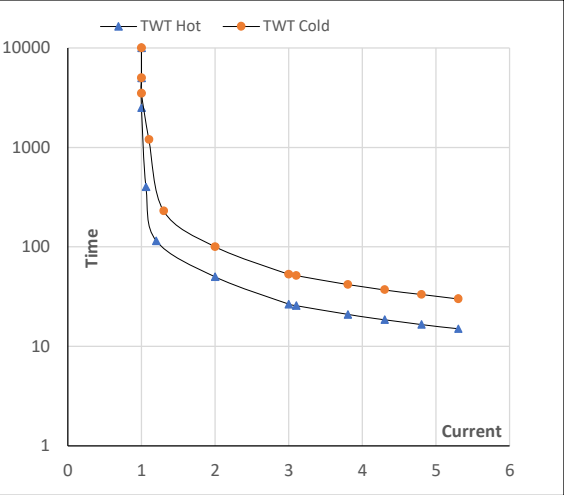
Model No. TCT7P53A1121GAA001

| 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 | 7.5 | 10 | 15.2 | 976 | 7.44 | 72.98 | IE3 | 40 | S1 | 1000 | 0.1355 | 141 |

Motor Speed Torque Data

| Load | | FL | I ₁ | I ₂ | I ₃ | I ₄ | I ₅ | LR |
|----------|----|-------|----------------|----------------|----------------|----------------|----------------|-----|
| TWT Hot | s | 10000 | 50 | 27 | 20 | 18 | 16 | 15 |
| TWT Cold | s | 10000 | 100 | 53 | 40 | 35 | 32 | 30 |
| Current | pu | 1 | 2 | 3 | 4 | 4.5 | 5 | 5.3 |

Thermal Characteristics Chart



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

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