

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCA5P54A3121GACD01

Catalog No: TCA5P54A3121GACD01

Cast Iron Motor, 7.50 HP, 3 Ph, 50 Hz, 415 V, 750 RPM, 160M Frame, TEFC



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RegalRexnord

Nameplate Specifications

| | | | |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP | 7.50 Hp | Output KW | 5.5 kW |
| Frequency | 50 Hz | Voltage | 415 V |
| Current | 12.3 A | Speed | 729 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 86.2 % | Power Factor | 0.72 |
| Duty | S1 | Insulation Class | F |
| Frame | 160M | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 50 °C |
| Drive End Bearing Size | 6309 | Opp Drive End Bearing Size | 6209 |
| 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 | 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 | | |
| Outline Drawing | 0216000524 | Connection Drawing | 8442000085 |

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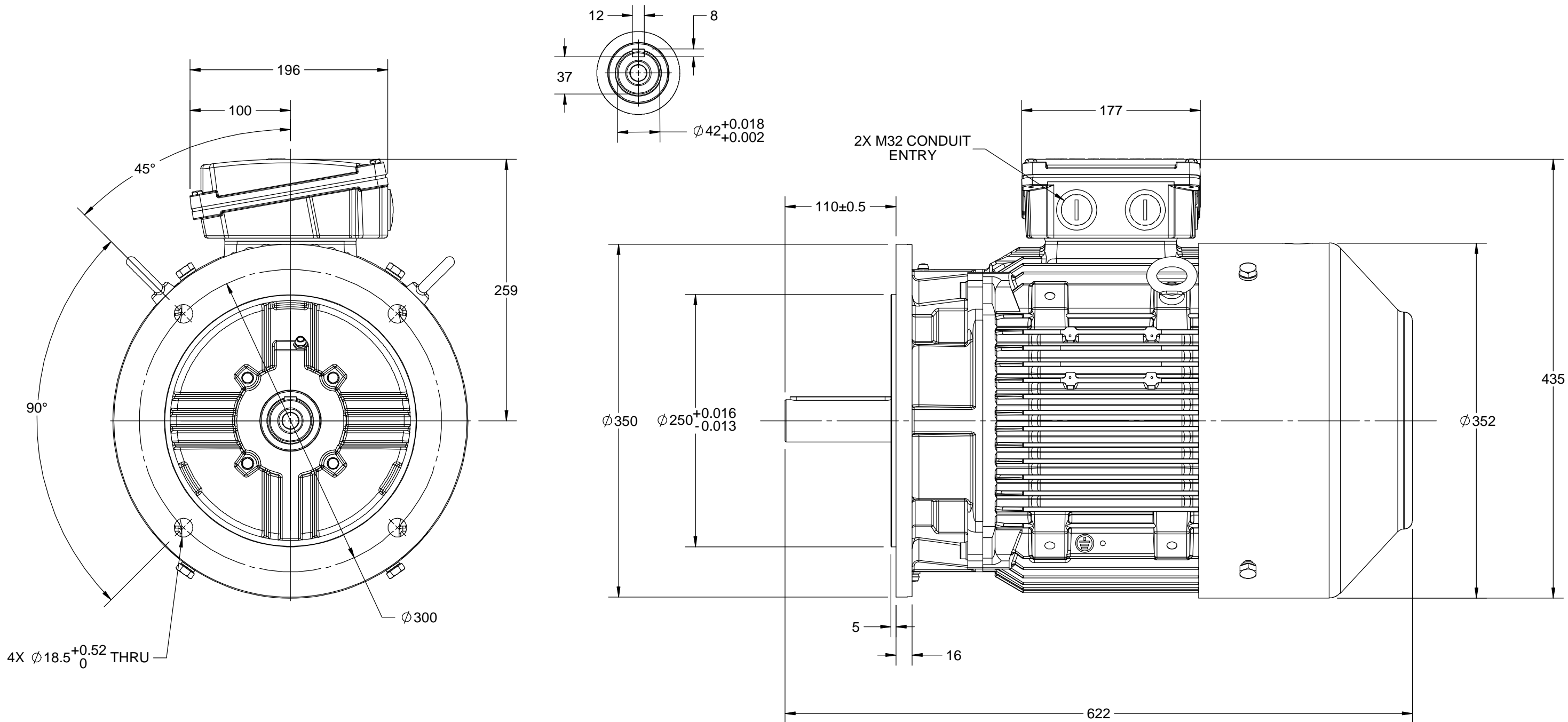
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
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B

A

A



| | | | | | | | |
|---|---|------------------|--|------------------------------|--|-----------------|----------------|
| DRAWING REVISION C | REVISION BY S.MUDDA | DATE 3/9/2020 | | DRAWN BY KCS |  Regal Beloit America, Inc. | | |
| ECO ECO-0190270 | APPROVED BY JAY | DATE 3/9/2020 | | DATE 19/03/2015 | | | |
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| | | | | DATE 19/03/2015 | | | |
| | | | | REFERENCE | MATERIAL | | PROCESS/FINISH |
| THIRD ANGLE PROJECTION |  | SIZE B | | DRAWING NUMBER 0216000524 | | 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 | | SHEET 1 OF 1 |

Model No. TCA5P54A3121GACD01

| U | Δ / Y | f | P | P | I | n | T | IE | % EFF at __ load | | | | PF at __ load | | | I _A /I _N | T _A /T _N | T _K /T _N |
|-----|-------|------|------|------|------|-------|-------|-------|------------------|------|-------|-------|---------------|-------|-------|--------------------------------|--------------------------------|--------------------------------|
| (V) | Conn | [Hz] | [kW] | [hp] | [A] | [RPM] | [Nm] | Class | 5/4FL | FL | 3/4FL | 1/2FL | FL | 3/4FL | 1/2FL | [pu] | [pu] | [pu] |
| 415 | Δ | 50 | 5.5 | 7.5 | 12.3 | 729 | 73.43 | IE3 | - | 86.2 | 86.2 | 87.2 | 0.72 | 0.64 | 0.51 | 5.3 | 1.7 | 2.3 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

| | |
|----------------------------------|----------------------------|
| Motor type | TCA |
| Enclosure | TEFC |
| Frame Material | Cast Iron |
| Frame size | 160M |
| Duty | S1 |
| Voltage variation * | ± 10% |
| Frequency variation * | ± 5% |
| Combined variation * | 10% |
| Design | N |
| Service factor | 1.0 |
| Insulation class | F |
| Ambient temperature | -20 to +50 °C |
| Temperature rise (by resistance) | 70 [Class B] K |
| Altitude above sea level | 1000 meter |
| Hazardous area classification | NA |
| Zone classification | NA |
| Gas group | NA |
| Temperature class | NA |
| Rotor type | Aluminum Die cast |
| Bearing type | Anti-friction ball bearing |
| DE / NDE bearing | 6309-2Z / 6209-2Z |
| Lubrication method | Greased for life |
| Type of grease | NA |

| | |
|---|--|
| Degree of protection | IP 55 |
| Mounting type | IM B5 |
| Cooling method | IC 411 |
| Motor weight - approx. | 155 kg |
| Gross weight - approx. | 175 kg |
| Motor inertia | 0.1674 kgm ² |
| Load inertia | Customer to Provide |
| Vibration level | 2.2 mm/s |
| Noise level (1meter distance from motor) | 59 dB(A) |
| No. of starts hot/cold/Equally spread | 2/3/4 |
| Starting method | DOL |
| Type of coupling | Direct |
| LR withstand time (hot/cold) | 15/30 s |
| Direction of rotation | Bi-directional |
| Standard rotation | Clockwise form DE |
| Paint shade | RAL 5014 |
| Accessories | |
| Accessory - 1 | - |
| Accessory - 2 | - |
| Accessory - 3 | - |
| Terminal box position | TOP |
| Maximum cable size/conduit size | 1R x 3C x 35mm ² /2 X M32 x 1.5 |
| 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

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.

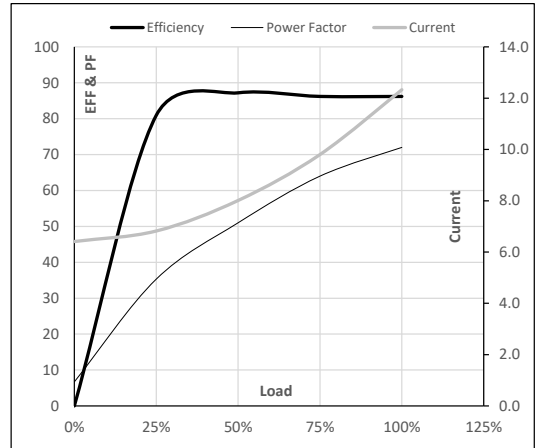
| Efficiency | Europe | China | India | Aus/Nz | Brazil | Global IEC |
|------------|--------|-------|-----------------|--------|--------|------------|
| Standards | - | - | IS 12615 : 2018 | - | - | - |

Model No. TCA5P54A3121GACD01

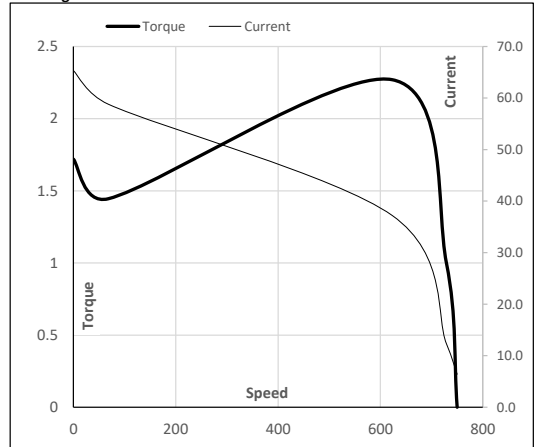
| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [RPM] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg-m ²] | Weight [kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC | 415 | Δ | 50 | 5.5 | 7.5 | 12.3 | 729 | 7.49 | 73.43 | IE3 | 50 | S1 | 1000 | 0.1674 | 155 |

Motor Load Data

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|-----|-------|-------|-------|------|-------|
| Current | A | 6.4 | 6.8 | 8.0 | 9.8 | 12.3 | |
| Torque | Nm | 0.0 | 18.0 | 36.1 | 54.6 | 73.4 | |
| Speed | r/min | 750 | 745 | 740 | 735 | 729 | |
| Efficiency | % | 0.0 | 80.9 | 87.2 | 86.2 | 86.2 | |
| Power Factor | % | 6.7 | 35.3 | 51.0 | 64.0 | 72.0 | |

Performance vs Load Chart

Motor Speed Torque Data

| Load Point | | LR | P-Up | BD | Rated | NL |
|------------|-------|------|------|------|-------|-----|
| Speed | r/min | 0 | 68 | 623 | 729 | 750 |
| Current | A | 65.3 | 58.8 | 37.2 | 12.3 | 6.4 |
| 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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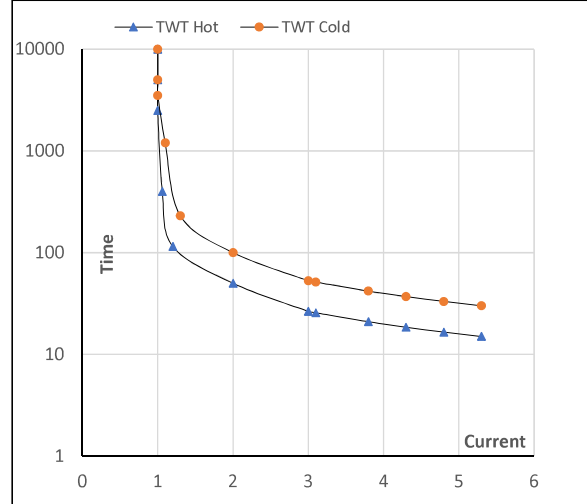
Model No. TCA5P54A3121GACD01

| 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 | 415 | Δ | 50 | 5.5 | 7.5 | 12.3 | 729 | 7.48 | 73.43 | IE3 | 50 | S1 | 1000 | 0.1674 | 155 |

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 | 36 | 31 | 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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