

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: SCA0454A3123GAAD01

Catalog No: SCA0454A3123GAAD01

TerraMAX® Cast Iron Motor, 60 HP, 3 Ph, 50 Hz, 415 V, 750 RPM, 280M Frame, TEFC



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RegalRexnord

Nameplate Specifications

| | | | |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP | 60 Hp | Output KW | 45.0 kW |
| Frequency | 50 Hz | Voltage | 415 V |
| Current | 87.4 A | Speed | 738 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 90.7 % | Power Factor | 0.7899 |
| Duty | S1 | Insulation Class | F |
| Frame | 280M | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 50 °C |
| Drive End Bearing Size | 6314 | Opp Drive End Bearing Size | 6314 |
| UL | No | CSA | No |
| CE | Yes | IP Code | 55 |
| Number of Speeds | 1 | Efficiency Class | IE2 |

Technical Specifications

| | | | |
|-----------------------|---------------|-----------------------|----------------|
| Electrical Type | Squirrel Cage | Starting Method | Direct On Line |
| Poles | 8 | Rotation | Bi-Directional |
| Mounting | B5 | Motor Orientation | Horizontal |
| Drive End Bearing | C3 | Opp Drive End Bearing | C3 |
| Frame Material | Cast Iron | Shaft Type | Keyed |
| Overall Length | 1061 mm | Frame Length | 550 mm |
| Shaft Diameter | 75 mm | Shaft Extension | 140 mm |
| Assembly/Box Mounting | TOP | | |
| Connection Drawing | 8442000085 | Outline Drawing | 0228001132 |

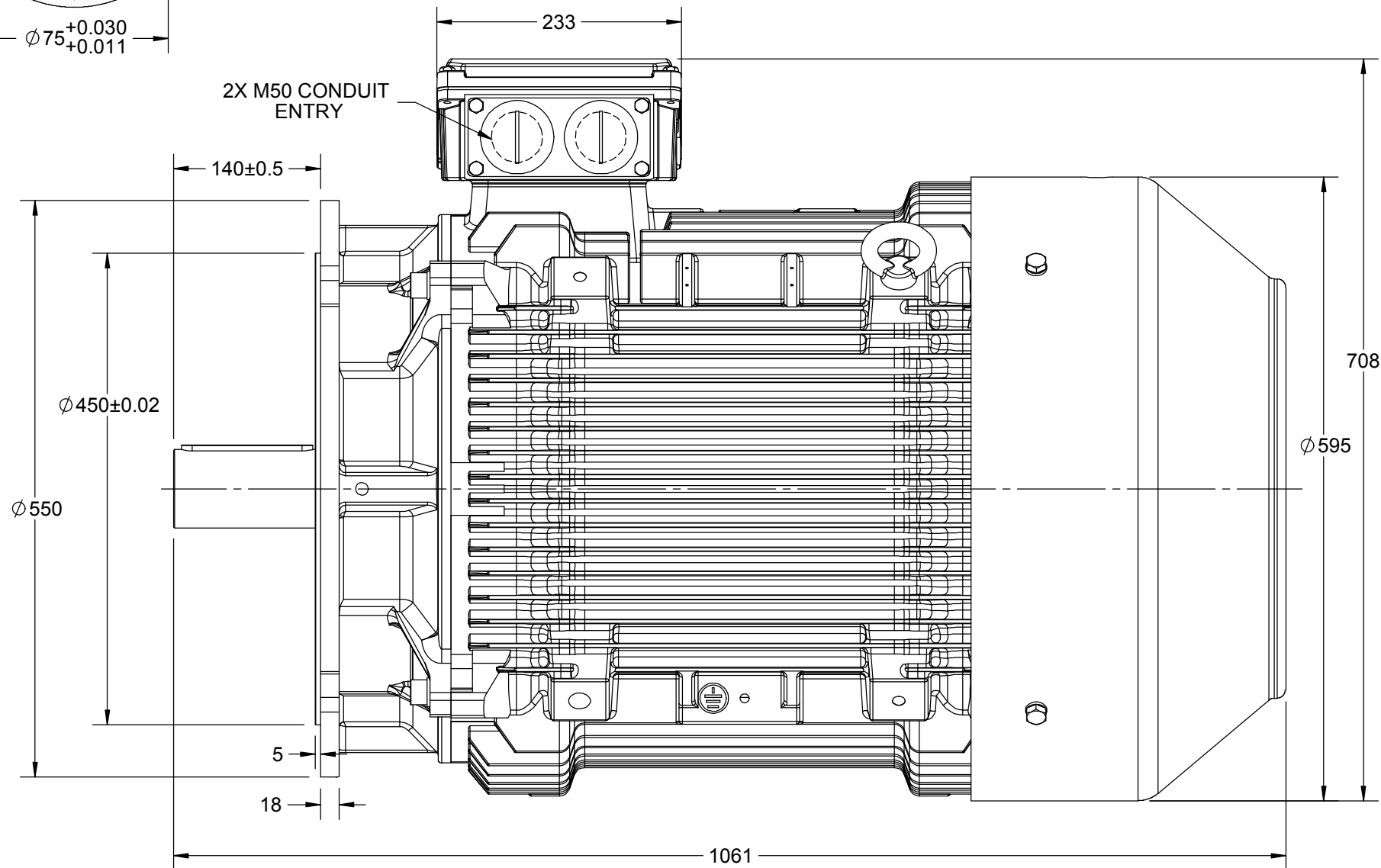
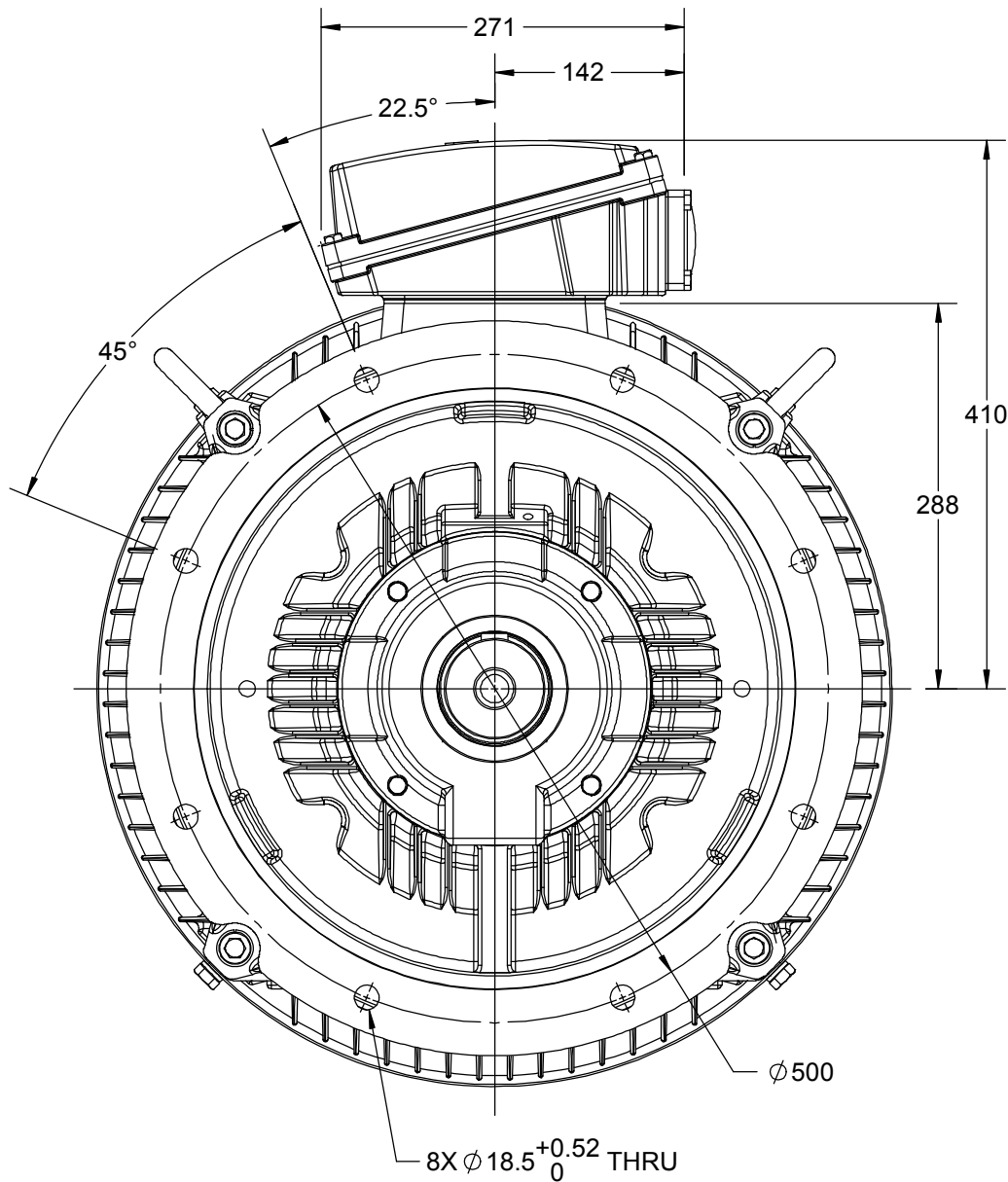
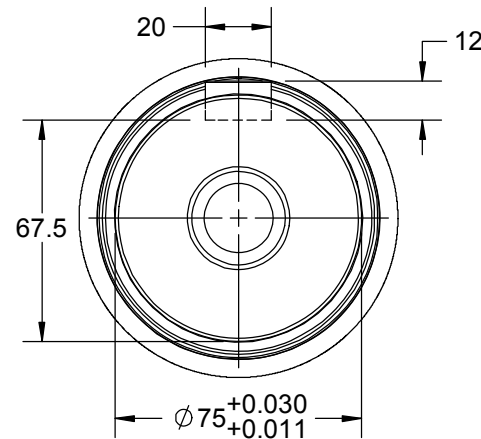
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| | | |
|--|-------------------|--------------------|
| DRAWING REVISION B | REVISION BY LK | DATE 01/07/2019 |
| ECO ECO-0169536 | APPROVED BY SR | DATE 01/07/2019 |
| ECO DESCRIPTION MODEL UPDATED AS PER NEW 3D STRUCTURE | | |
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| | | | |
|---------------------------|---|-------------------------------------|-----------------|
| DRAWN BY PRIYA | marathon™ Motors | | |
| DATE 06/04/2018 | | | |
| APPROVED BY JAY | DESCRIPTION OUTLINE 280M-4~8P-B5 MTG. MOTOR TYPE: SCA | | |
| DATE 06/04/2018 | | | |
| REFERENCE | MATERIAL | PROCESS/FINISH | |
| THIRD ANGLE PROJECTION | SIZE B | DRAWING NUMBER 0228001132 | 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. | | |
| | | | |
| | DESCRIPTION CONN DIAGRAM-NAMEPLATE | | |
| | MATERIAL | | PROCESS/FINISH |
| | SIZE A | DRAWING NUMBER 8442000085 | SHEET 1 OF 1 |

Model No. SCA0454A3123GAAD01

| 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] |
|----------|----------------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|----|-------|-------|---------------|-------|-------|-------------------|-------------------|-------------------|
| 415 | Δ | 50 | 45 | 60 | 87.4 | 738 | 579.12 | IE2 | 5/4FL | FL | 3/4FL | 1/2FL | FL | 3/4FL | 1/2FL | 4.7 | 1.9 | 2.2 |
| | | | | | | | | | | | | | | | | | | |

| | | | |
|----------------------------------|-----------------------------------|---|--|
| Motor type | SCA | Degree of protection | IP 55 |
| Enclosure | TEFC | Mounting type | IM B5 |
| Frame Material | Cast Iron | Cooling method | IC 411 |
| Frame size | 280M | Motor weight - approx. | 762 kg |
| Duty | S1 | Gross weight - approx. | 797 kg |
| Voltage variation * | $\pm 10\%$ | Motor inertia | 3.5326 kgm ² |
| Frequency variation * | $\pm 5\%$ | Load inertia | Customer to Provide |
| Combined variation * | 10% | Vibration level | 2.2 mm/s |
| Design | N | Noise level (1meter distance from motor) | 64 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 +50 °C | Type of coupling | Direct |
| Temperature rise (by resistance) | 70 [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 | NA | Standard rotation | Clockwise form DE |
| Zone classification | NA | Paint shade | RAL 5014 |
| Gas group | NA | Accessories | |
| Temperature class | NA | Accessory - 1 | - |
| 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 | Regreaseable | Maximum cable size/conduit size | 1R x 3C x 95mm ² /2 x M50 x 1.5 |
| Type of grease | Shell Gadus S5 V100 or Equivalent | Auxiliary terminal box | Available on Request |

 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.

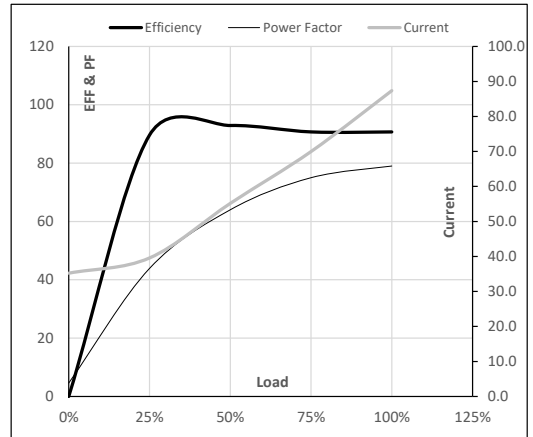
| Efficiency Standards | Europe | China | India | Aus/Nz | Brazil | Global IEC |
|----------------------|--------|-------|-----------------|--------|--------|------------|
| | - | - | IS 12615 : 2018 | - | - | - |

Model No. SCA0454A3123GAAD01

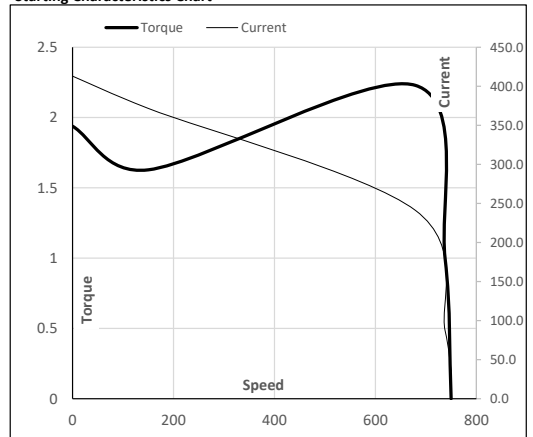
| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [RPM] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg-m ²] | Weight [kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC | 415 | Δ | 50 | 45 | 60 | 87.4 | 738 | 59.05 | 579.12 | IE2 | 50 | S1 | 1000 | 3.5326 | 762 |

Motor Load Data

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current | A | 35.2 | 39.6 | 55.2 | 70.0 | 87.4 | |
| Torque | Nm | 0.0 | 143.0 | 287.1 | 432.4 | 579.1 | |
| Speed | r/min | 750 | 747 | 744 | 741 | 738 | |
| Efficiency | % | 0.0 | 89.6 | 92.9 | 90.7 | 90.7 | |
| Power Factor | % | 4.6 | 43.9 | 64.0 | 75.0 | 79.0 | |

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 | 413.0 | 371.7 | 241.3 | 87.4 | 35.2 |
| Torque | pu | 1.9 | 1.6 | 2.2 | 1 | 0 |

Starting Characteristics Chart

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

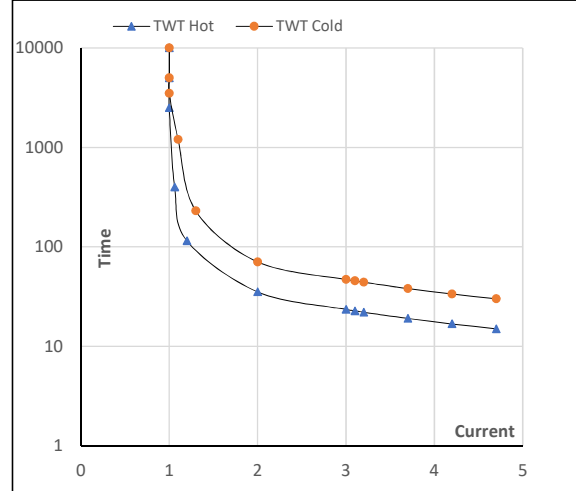
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| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [rpm] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg-m ²] | Weight [kg] |
|-----------|----------|----------------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC | 415 | Δ | 50 | 45 | 60 | 87.4 | 738 | 59.05 | 579.12 | IE2 | 50 | S1 | 1000 | 3.5326 | 762 |

Motor Speed Torque Data

| Load | FL | I ₁ | I ₂ | I ₃ | I ₄ | I ₅ | LR | |
|----------|---------|----------------|----------------|----------------|----------------|----------------|-----|-----|
| TWT Hot | s 10000 | 35 | 24 | 20 | 18 | 16 | 15 | |
| TWT Cold | s 10000 | 71 | 47 | 40 | 37 | 32 | 30 | |
| Current | pu | 1 | 2 | 3 | 3.5 | 4 | 4.5 | 4.7 |

Thermal Characteristics Chart

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

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