

PRODUCT INFORMATION PACKET

Model No: TCA1854A3111GACD01

Catalog No: TCA1854A3111GACD01

185.0 kW General Purpose Low Voltage IEC Motor, 3 phase, 750 RPM, 415 V, 355M Frame, TEFC
Cast Iron IE3 Efficiency Motors





Nameplate Specifications

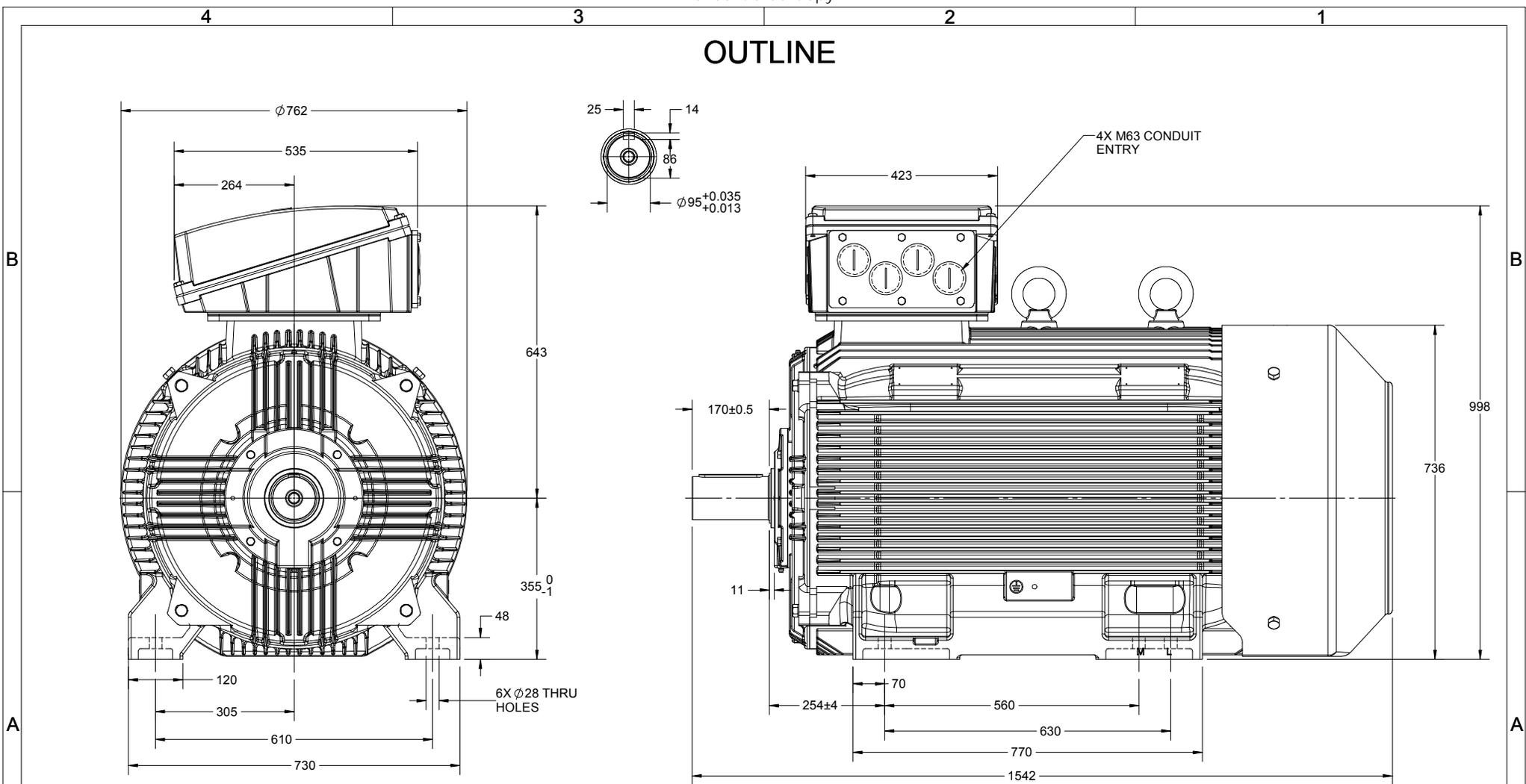
| | | | |
|----------------------------|---------|------------------------|-----------------------------|
| Output HP | 250 Hp | Output KW | 185.0 kW |
| Frequency | 50 Hz | Voltage | 415 V |
| Current | 328.2 A | Speed | 742 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 94.5 % | Power Factor | 0.83 |
| Duty | S1 | Insulation Class | F |
| Frame | 355M | Enclosure | Totally Enclosed Fan Cooled |
| Ambient Temperature | 50 °C | Drive End Bearing Size | 6322 |
| Opp Drive End Bearing Size | 6322 | UL | No |
| CSA | No | CE | Yes |
| IP Code | 55 | | |

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 | 1542 mm | Frame Length | 1010 mm |
| Shaft Diameter | 95 mm | Shaft Extension | 170 mm |
| Assembly/Box Mounting | Top | | |
| Connection Drawing | 8442000085 | Outline Drawing | 0235501829 |

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OUTLINE



| | | |
|---|--------------------|--------------------|
| DRAWING REVISION C | REVISION BY NIV | DATE 08/05/2019 |
| ECO ECO-0165600 | APPROVED BY SR | DATE 08/05/2019 |
| ECO DESCRIPTION MODEL UPDATED | | |
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| | | |
|---------------------------|-----------------------------------|------------------------------|
| DRAWN BY JOY | | |
| DATE 18/07/2014 | | |
| APPROVED BY SBD | DESCRIPTION OUTLINE | |
| DATE 18/07/2014 | 355FR-B3 MTG. MOTOR TYPE: TCA/QCA | |
| REFERENCE | MATERIAL | PROCESS/FINISH |
| THIRD ANGLE PROJECTION | SIZE B | DRAWING NUMBER 0235501829 |
| | | SHEET 1 OF 1 |

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| DRAWING REVISION | REVISION BY | DATE |
|--|--------------------|--------------------|
| A | SN | 13/01/2017 |
| 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 | | | | |
| THIRD ANGLE PROJECTION | SIZE A | DRAWING NUMBER 8442000085 | PROCESS/FINISH | SHEET 1 OF 1 |

Model No. TCA1854A3111GACD01

| U (V) | Δ / Y Conn | f (Hz) | P | | I | | | T (Nm) | IE Class | % EFF at __ load | | | | PF at __ load | | | I _L /I _N [pu] | T _M /T _N [pu] | T _L /T _N [pu] |
|----------|---------------|-----------|------|------|-------|-------|---------|-----------|-------------|------------------|-------|-------|------|---------------|-------|---|--|--|--|
| | | | [kW] | [hp] | [A] | [RPM] | 5/4FL | | | FL | 3/4FL | 1/2FL | FL | 3/4FL | 1/2FL | | | | |
| 415 | Δ | 50 | 185 | 250 | 328.1 | 742 | 2399.88 | IE3 | - | 94.5 | 94.5 | 95.1 | 0.83 | 0.81 | 0.72 | 6 | 1.5 | 2.4 | |

| | | | |
|----------------------------------|-----------------------------------|---|---|
| Motor type | TCA | Degree of protection | IP 55 |
| Enclosure | TEFC | Mounting type | IM B3 |
| Frame Material | Cast Iron | Cooling method | IC 411 |
| Frame size | 355M | Motor weight - approx. | 1926 kg |
| Duty | S1 | Gross weight - approx. | 1971 kg |
| Voltage variation * | ± 10% | Motor inertia | 12.0967 kgm ² |
| Frequency variation * | ± 5% | Load inertia | Customer to Provide |
| Combined variation * | 10% | Vibration level | 2.8 mm/s |
| Design | N | Noise level (1meter distance from motor) | 65 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 bearing | Accessory - 3 | - |
| DE / NDE bearing | 6322 C3 / 6322 C3 | Terminal box position | TOP |
| Lubrication method | Regreasable | Maximum cable size/conduit size | 1R x 3C x 300mm ² /4 x M63 x 1.5 |
| Type of grease | Shell Gadus S5 V100 or Equivalent | Auxiliary terminal box | NA |

I_L/I_N - Locked Rotor Current / Rated Current

T_M/T_N - Breakdown Torque / Rated Torque

T_L/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 | - | - | - |

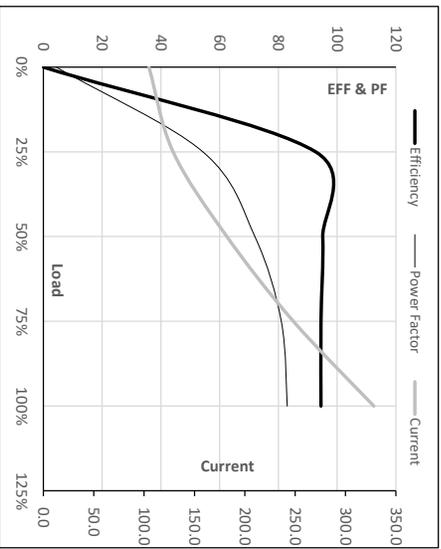
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| Enclosure | U (V) | Δ /Y Conn | f (Hz) | P (kW) | P (hp) | I (A) | n (RPM) | T (kgm) | T (Nm) | IE Class | Amb Temp (°C) | Duty | Elevation (m) | Inertia (kg·m ²) | Weight (kg) |
|-----------|-------|------------------|--------|--------|--------|-------|---------|---------|---------|----------|---------------|------|---------------|------------------------------|-------------|
| TFC | 415 | Δ | 50 | 185 | 245 | 328.1 | 742 | 244.72 | 2399.88 | IE3 | 50 | S1 | 1000 | 12.0967 | 1926 |

Motor Load Data

| Load Point | NI | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|-------|-------|--------|--------|--------|
| Current | A | 104.8 | 128.8 | 182.2 | 248.2 | 328.1 |
| Torque | Nm | 0.0 | 595.2 | 1193.3 | 1794.6 | 2399.9 |
| Speed | r/min | 750 | 748 | 746 | 744 | 742 |
| Efficiency | % | 0.0 | 92.7 | 95.1 | 94.5 | 94.5 |
| Power Factor | % | 4.4 | 54.3 | 72.0 | 81.0 | 83.0 |

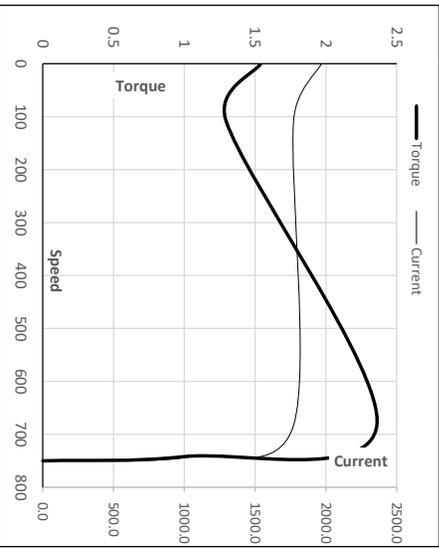
Performance vs Load Chart



Motor Speed Torque Data

| Load Point | LR | P-Up | BD | Rated | NI | |
|------------|-------|--------|--------|--------|-------|-------|
| Speed | r/min | 0 | 107 | 683 | 742 | 750 |
| Current | A | 1968.9 | 1772.0 | 1053.0 | 328.1 | 104.8 |
| Torque | pu | 1.5 | 1.3 | 2.4 | 1 | 0 |

Starting Characteristics Chart



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

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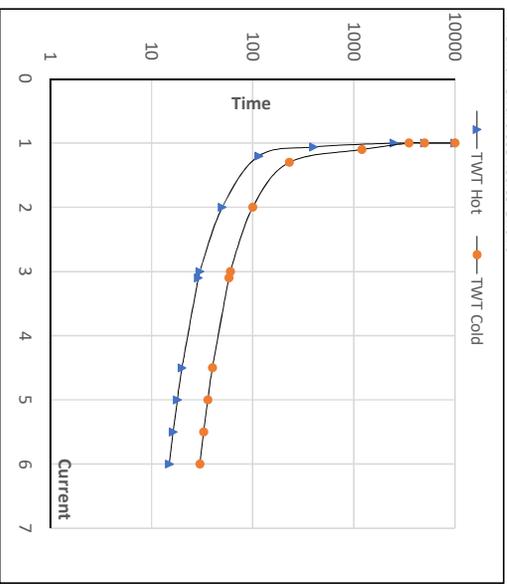
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| | | | | | | | | | | | | | | | |
|-----------|-----|-------|----|------|------|-------|-------|--------|---------|-------|------|------|-----------|----------------------|--------|
| Enclosure | U | Δ / Y | f | P | P | I | n | T | T | IE | Amb | Duty | Elevation | Inertia | Weight |
| (V) | 415 | Δ | 50 | [kW] | [hp] | [A] | [rpm] | [kgm] | [Nm] | Class | [°C] | S1 | [m] | [kg·m ²] | [kg] |
| TEFC | | | | 185 | 245 | 328.1 | 742 | 244.55 | 2399.88 | IE3 | 50 | S1 | 1000 | 12.0967 | 1926 |

Motor Speed Torque Data

| Load | FL | I ₁ | I ₂ | I ₃ | I ₄ | I ₅ | LR | |
|----------|----|----------------|----------------|----------------|----------------|----------------|-----|----|
| TWT Hot | s | 10000 | 50 | 30 | 25 | 18 | 16 | 15 |
| TWT Cold | s | 10000 | 100 | 60 | 50 | 36 | 33 | 30 |
| Current | pu | 1 | 2 | 3 | 4 | 5 | 5.5 | 6 |

Thermal Characteristics Chart



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

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