

PRODUCT INFORMATION PACKET

Model No: TCA0033A3131GACD01

Catalog No: TCA0033A3131GACD01

3.0 kW General Purpose Low Voltage IEC Motor, 3 phase, 1000 RPM, 415 V, 132S Frame, TEFC
Cast Iron IE3 Efficiency Motors





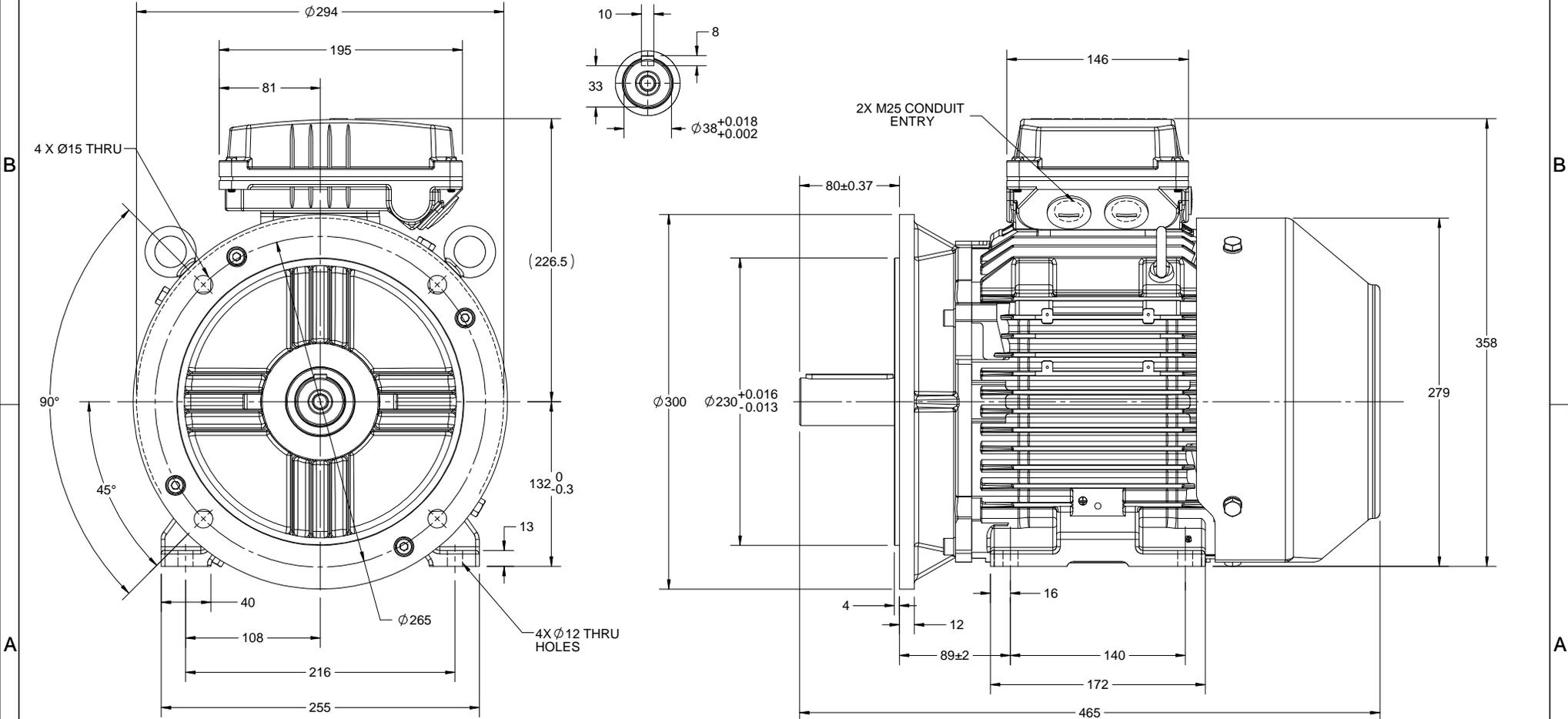
Nameplate Specifications

| | | | |
|----------------------------|--------|------------------------|-----------------------------|
| Output HP | 4 Hp | Output KW | 3.0 kW |
| Frequency | 50 Hz | Voltage | 415 V |
| Current | 6.8 A | Speed | 973 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 85.6 % | Power Factor | 0.72 |
| Duty | S1 | Insulation Class | F |
| Frame | 132S | Enclosure | Totally Enclosed Fan Cooled |
| Ambient Temperature | 50 °C | Drive End Bearing Size | 6308 |
| Opp Drive End Bearing Size | 6208 | UL | No |
| CSA | No | CE | Yes |
| IP Code | 55 | | |

Technical Specifications

| | | | |
|-----------------------|---------------|-----------------------|----------------|
| Electrical Type | Squirrel Cage | Starting Method | Direct On Line |
| Poles | 6 | Rotation | Bi-Directional |
| Mounting | B35 | Motor Orientation | Horizontal |
| Drive End Bearing | 2z-C3 | Opp Drive End Bearing | 2z-C3 |
| Frame Material | Cast Iron | Shaft Type | Keyed |
| Overall Length | 465 mm | Frame Length | 202 mm |
| Shaft Diameter | 38 mm | Shaft Extension | 80 mm |
| Assembly/Box Mounting | Top | | |
| Connection Drawing | 8442000085 | Outline Drawing | 0213200611 |

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| | | |
|--|--------------------------|--------------------|
| DRAWING REVISION B | REVISION BY A. KEETHA | DATE 13/07/2018 |
| ECO ECO-0147359 | APPROVED BY JAY | DATE 13/07/2018 |
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| | | | |
|--|--------------|------------------|-----------------|
| TOLERANCES UNLESS OTHERWISE SPECIFIED: | | | |
| DEC. | INCH | mm | ANGLE |
| .X | ± 0.1 | [± 2.5] | $\pm 0.5^\circ$ |
| .XX | ± 0.01 | [± 0.25] | |
| .XXX | ± 0.005 | [± 0.127] | |
| .XXXX | ± 0.0005 | [± 0.0127] | |
| REMOVE BURRS & BREAK SHARP EDGES: .003/.015 [.076/.381] X 45° CORNER FILLETS: R.02 [.51] MACHINED SURFACES: 125 $\sqrt{}$ mm 3.2 $\sqrt{}$ INCH | | | |
| mm SHOWN IN [BRACKETS] | | | |

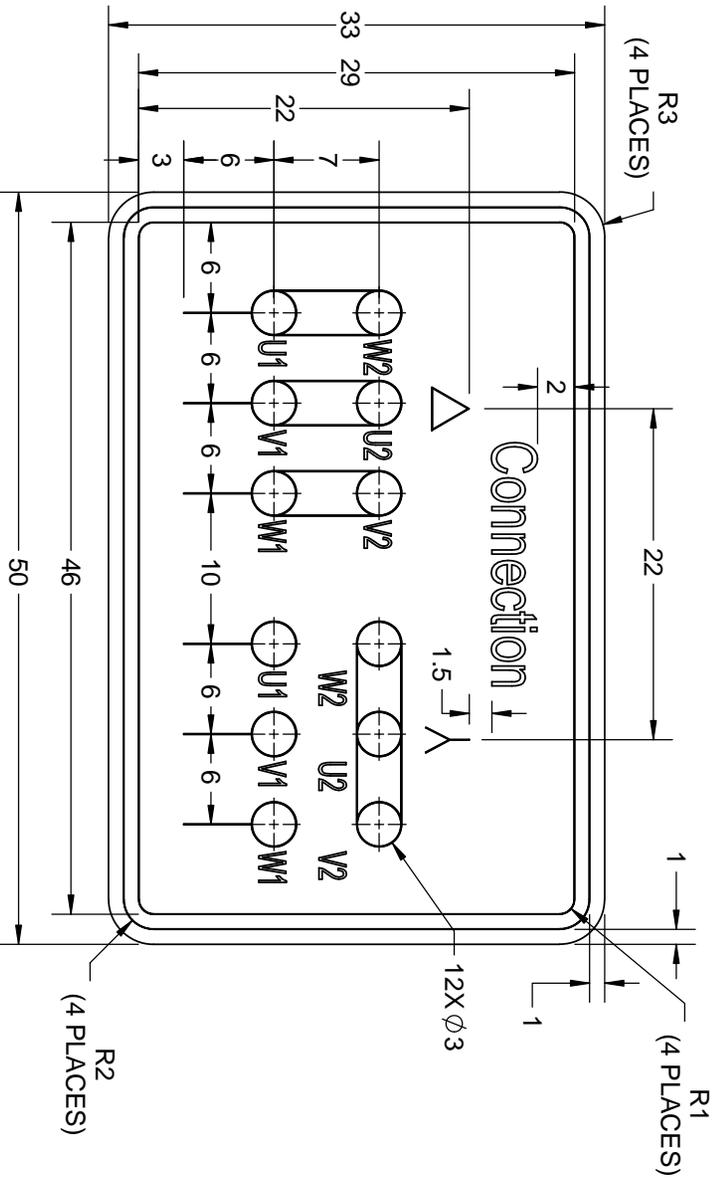
| |
|------------------------|
| DRAWN BY VINAY |
| DATE 10/11/2014 |
| APPROVED BY KPK |
| DATE 10/11/2014 |
| REFERENCE |
| THIRD ANGLE PROJECTION |

| | |
|---|------------------------------|
| Regal Beloit America, Inc. | |
| DESCRIPTION OUTLINE 132-S FR.- B35 MTG. MOTOR TYPE TCA | |
| MATERIAL | PROCESS/FINISH |
| SIZE B | DRAWING NUMBER 0213200611 |
| 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 | MATERIAL | PROCESS/FINISH | |
| THIRD ANGLE PROJECTION | SIZE A | DRAWING NUMBER 8442000085 | SHEET 1 OF 1 |

Model No. TCA0033A3131GACD01

| U (V) | Δ / Y Conn | f (Hz) | P | | I | | n (RPM) | 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] | [hp] | | | | 5/4FL | FL | 3/4FL | 1/2FL | FL | 3/4FL | 1/2FL | | | |
| 415 | Y | 50 | 3 | 4.0 | 6.8 | 973 | 29.35 | | IE3 | - | 85.6 | 85.6 | 84 | 0.72 | 0.63 | 0.48 | 5.4 | 2.0 | 2.5 |
| | | | | | | | | | | | | | | | | | | | |

| | | | |
|----------------------------------|----------------------------|---|--|
| Motor type | TCA | Degree of protection | IP 55 |
| Enclosure | TEFC | Mounting type | IM B35 |
| Frame Material | Cast Iron | Cooling method | IC 411 |
| Frame size | 132S | Motor weight - approx. | 70 kg |
| Duty | S1 | Gross weight - approx. | 73 kg |
| Voltage variation * | ± 10% | Motor inertia | 0.0390 kgm ² |
| Frequency variation * | ± 5% | Load inertia | Customer to Provide |
| Combined variation * | 10% | Vibration level | 1.6 mm/s |
| Design | N | Noise level (1meter distance from motor) | 59 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 | 6308-2Z / 6208-2Z | Terminal box position | TOP |
| Lubrication method | Greased for life | Maximum cable size/conduit size | 1R x 3C x 16mm ² /2 x M25 x 1.5 |
| Type of grease | NA | 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 | - | - | - |

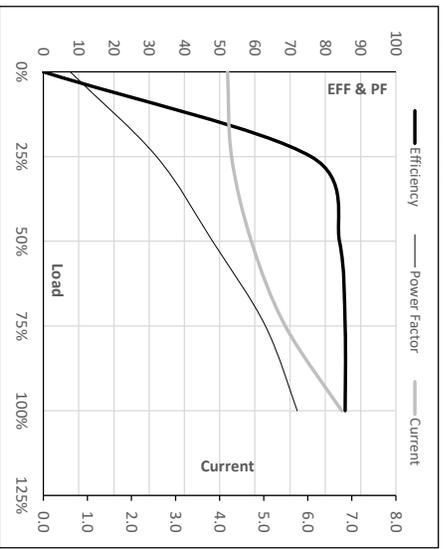
Model No. TCA0033A3131GACD01

| 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) |
|-----------|-------|------------------|--------|--------|--------|-------|---------|---------|--------|----------|---------------|------|---------------|------------------------------|-------------|
| TEFC | 415 | Y | 50 | 3 | 4.0 | 6.8 | 973 | 2.99 | 29.35 | IE3 | 50 | S1 | 1000 | 0.039 | 70 |

Motor Load Data

| Load Point | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|-------|-------|-------|------|-------|
| Current | A | 4.2 | 4.3 | 4.7 | 5.5 | 6.8 |
| Torque | Nm | 0.0 | 7.2 | 14.5 | 21.8 | 29.4 |
| Speed | r/min | 1000 | 993 | 987 | 980 | 973 |
| Efficiency | % | 0.0 | 75.9 | 84.0 | 85.6 | 85.6 |
| Power Factor | % | 7.6 | 32.1 | 48.0 | 63.0 | 72.0 |

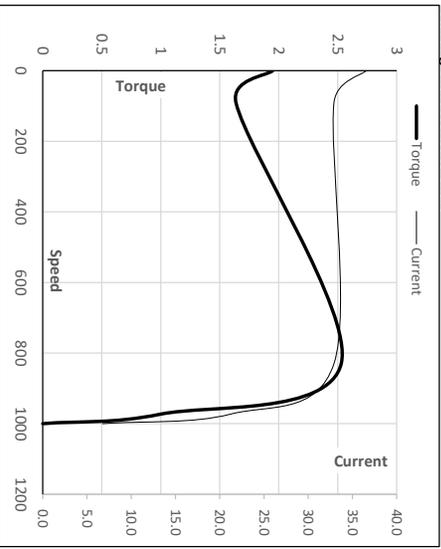
Performance vs Load Chart



Motor Speed Torque Data

| Load Point | LR | P-Up | BD | Rated | NL | |
|------------|-------|------|------|-------|-----|------|
| Speed | r/min | 0 | 91 | 830 | 973 | 1000 |
| Current | A | 36.6 | 32.9 | 21.2 | 6.8 | 4.2 |
| Torque | pu | 2.0 | 1.6 | 2.5 | 1 | 0 |

Starting Characteristics Chart



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

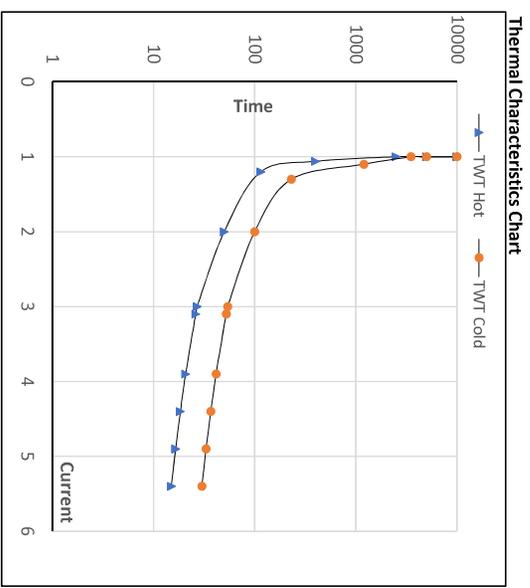
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|-----------|-----|-----|----|------|------|-----|-------|-------|-------|-------|------|------|-----------|----------------------|--------|
| Enclosure | U | Δ/Y | f | P | P | I | n | T | T | IE | Amb | Duty | Elevation | Inertia | Weight |
| (V) | 415 | Y | 50 | [kW] | [hp] | [A] | [rpm] | [kgm] | [Nm] | Class | [°C] | S1 | [m] | [kg·m ²] | [kg] |
| TEFC | | | | 3 | 4.0 | 6.8 | 973 | 2.99 | 29.35 | IE3 | 50 | | 1000 | 0.0390 | 70 |

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 |
| TWT Cold | s | 10000 | 100 | 54 | 41 | 36 | 33 |
| Current | pu | 1 | 2 | 3 | 4 | 4.5 | 5 |
| | | | | | | | 5.4 |



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

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