

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: TCA1854A3133GACD01

Catalog No: TCA1854A3133GACD01

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



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**REGAL**

### 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

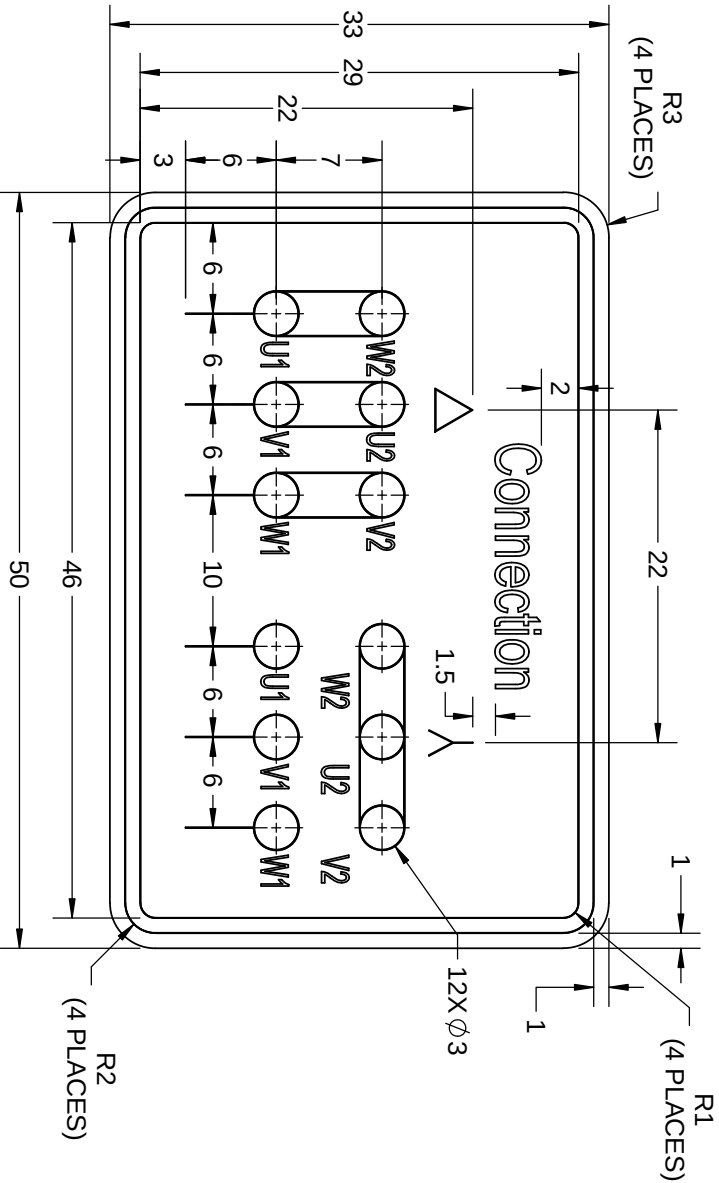
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|-----------------------|---------------|-----------------------|----------------|
| Electrical Type       | Squirrel Cage | Starting Method       | Direct On Line |
| Poles                 | 8             | Rotation              | Bi-Directional |
| Mounting              | B35           | 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 | R Side        |                       |                |
| Outline Drawing       | 0235502333    | Connection Drawing    | 8442000085     |

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| DRAWING REVISION    |             | REVISION BY | DATE       |
|---------------------|-------------|-------------|------------|
| A                   |             | SN          | 13/01/2017 |
| ECO                 | ECO-0116390 | APPROVED BY | DATE       |
| ECO DESCRIPTION     |             | SBD         | 13/01/2017 |
| 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.

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|                        |  |                                                                                 |  | DATE        |  | 16/12/2016     |  |                |  |
|                        |  |                                                                                 |  | APPROVED BY |  | SBD            |  |                |  |
|                        |  |                                                                                 |  | DATE        |  | 16/12/2016     |  |                |  |
|                        |  |                                                                                 |  | REFERENCE   |  |                |  |                |  |
| THIRD ANGLE PROJECTION |  |  |  | SIZE        |  | DRAWING NUMBER |  | SHEET          |  |
|                        |  |                                                                                 |  | A           |  | 8442000085     |  | 1 OF 1         |  |
|                        |  |                                                                                 |  | MATERIAL    |  |                |  | PROCESS/FINISH |  |
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**Model No.** TCA1854A3133GACD01

| U<br>(V) | Δ / Y<br>Conn | f<br>(Hz) | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[RPM] | T<br>[Nm] | IE<br>Class | % EFF at __ load |    |       |       | PF at __ load |       |       | I <sub>a</sub> /I <sub>N</sub><br>[pu] | T <sub>a</sub> /T <sub>N</sub><br>[pu] | T <sub>b</sub> /T <sub>N</sub><br>[pu] |
|----------|---------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|----|-------|-------|---------------|-------|-------|----------------------------------------|----------------------------------------|----------------------------------------|
| 415      | Δ             | 50        | 185       | 250       | 328.1    | 742        | 2399.88   | IE3         | 5/4FL            | FL | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL | 6                                      | 1.5                                    | 2.4                                    |
|          |               |           |           |           |          |            |           |             |                  |    |       |       |               |       |       |                                        |                                        |                                        |

|                                  |                                   |                                           |                                             |
|----------------------------------|-----------------------------------|-------------------------------------------|---------------------------------------------|
| Motor type                       | TCA                               | Degree of protection                      | IP 55                                       |
| Enclosure                        | TEFC                              | Mounting type                             | IM B35                                      |
| Frame Material                   | Cast Iron                         | Cooling method                            | IC 411                                      |
| Frame size                       | 355M                              | Motor weight - approx.                    | 1960 kg                                     |
| Duty                             | S1                                | Gross weight - approx.                    | 2005 kg                                     |
| Voltage variation *              | ± 10%                             | Motor inertia                             | 12.0967 kgm <sup>2</sup>                    |
| 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                     | RHS                                         |
| Lubrication method               | Regreasable                       | Maximum cable size/conduit size           | 1R x 3C x 300mm <sup>2</sup> /4 x M63 x 1.5 |
| Type of grease                   | Shell Gadus S5 V100 or Equivalent | Auxiliary terminal box                    | NA                                          |

I<sub>a</sub>/I<sub>N</sub> - Locked Rotor Current / Rated CurrentT<sub>b</sub>/T<sub>N</sub> - Breakdown Torque / Rated TorqueT<sub>a</sub>/T<sub>N</sub> - 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 | -      | -      | -          |



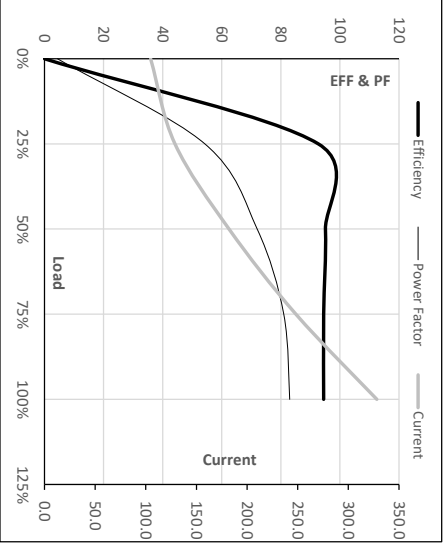
Model No. TCA185AA3133GACD01

| Enclosure | U   | $\Delta$ / Y | f    | P    | P   | I     | n     | T      | T       | IE   | Amb | Duty | Elevation | Inertia              | Weight |
|-----------|-----|--------------|------|------|-----|-------|-------|--------|---------|------|-----|------|-----------|----------------------|--------|
| (V)       | Com | [Hz]         | [kW] | [hp] | [A] | [RPM] | [kgm] | [Nm]   | Class   | [°C] |     |      | [m]       | [kg·m <sup>2</sup> ] | [kg]   |
| TEFC      | 415 | $\Delta$     | 50   | 185  | 245 | 328.1 | 742   | 244.72 | 2399.88 | IE3  | 50  | S1   | 1000      | 12.0967              | 1960   |

Motor Speed Data

| Load Point   | NL    | 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   |

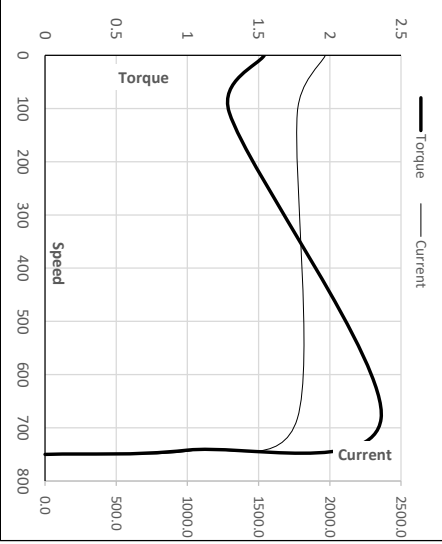
Performance vs Load Chart



Motor Speed Torque Data

| Load Point | LR    | P-Up   | BD     | Rated  | NL    |       |
|------------|-------|--------|--------|--------|-------|-------|
| 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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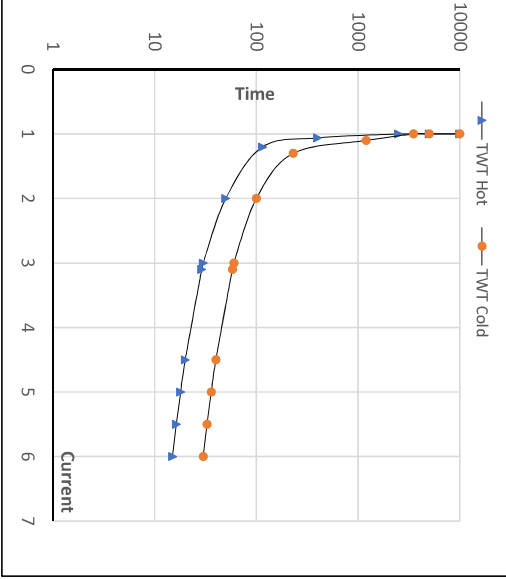
**Model No.** TCA1854A3133GACD01

| Enclosure | U<br>(V) | Δ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[rpm] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg·m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC      | 415      | Δ             | 50        | 185       | 245       | 328.1    | 742        | 244.55     | 2399.88   | IE3         | 50          | S1   | 1000             | 12.0967                         | 1960           |

**Motor Speed Torque Data**

| Load     | FL | I <sub>1</sub> | I <sub>2</sub> | I <sub>3</sub> | I <sub>4</sub> | I <sub>5</sub> | 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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