

# PRODUCT INFORMATION PACKET



Model No: TCN0113A1141GAC010

Catalog No: TCN0113A1141GAC010

TerraMAX® Cast Iron Motor, 15 HP, 3 Ph, 50 Hz, 400 V, 1000 RPM, 160L Frame, TEFC





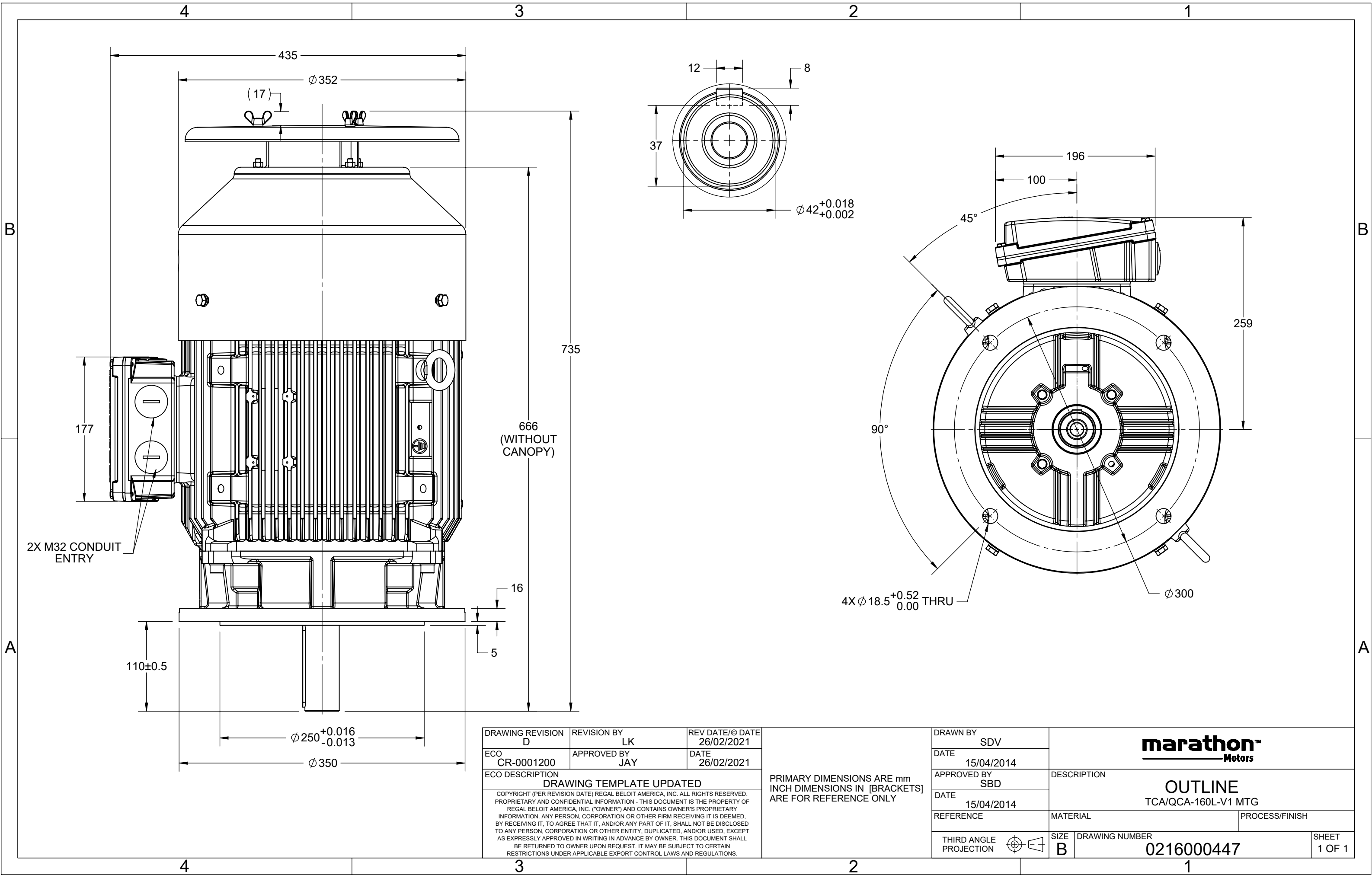
## Nameplate Specifications

|                        |               |                            |                             |
|------------------------|---------------|----------------------------|-----------------------------|
| Phase                  | 3             | Output HP                  | 15 Hp                       |
| Output KW              | 11.0 kW       | Voltage                    | 400 V                       |
| Speed                  | 977 r/min     | Service Factor             | 1                           |
| Frame                  | 160L          | Enclosure                  | Totally Enclosed Fan Cooled |
| Thermal Protection     | No Protection | Efficiency                 | 90.3 %                      |
| Ambient Temperature    | 40 °C         | Frequency                  | 50 Hz                       |
| Current                | 22.3 A        | Power Factor               | 0.79                        |
| Duty                   | S1            | Insulation Class           | F                           |
| 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                 | 6             | Rotation              | Bi-Directional |
| Mounting              | V1            | Motor Orientation     | Shaftdown      |
| Drive End Bearing     | 2z-C3         | Opp Drive End Bearing | 2z-C3          |
| Frame Material        | Cast Iron     | Shaft Type            | Keyed          |
| Overall Length        | 735 mm        | Frame Length          | 298 mm         |
| Shaft Diameter        | 42 mm         | Shaft Extension       | 110 mm         |
| Assembly/Box Mounting | Top           |                       |                |
| Connection Drawing    | 8442000085    | Outline Drawing       | 0216000447     |

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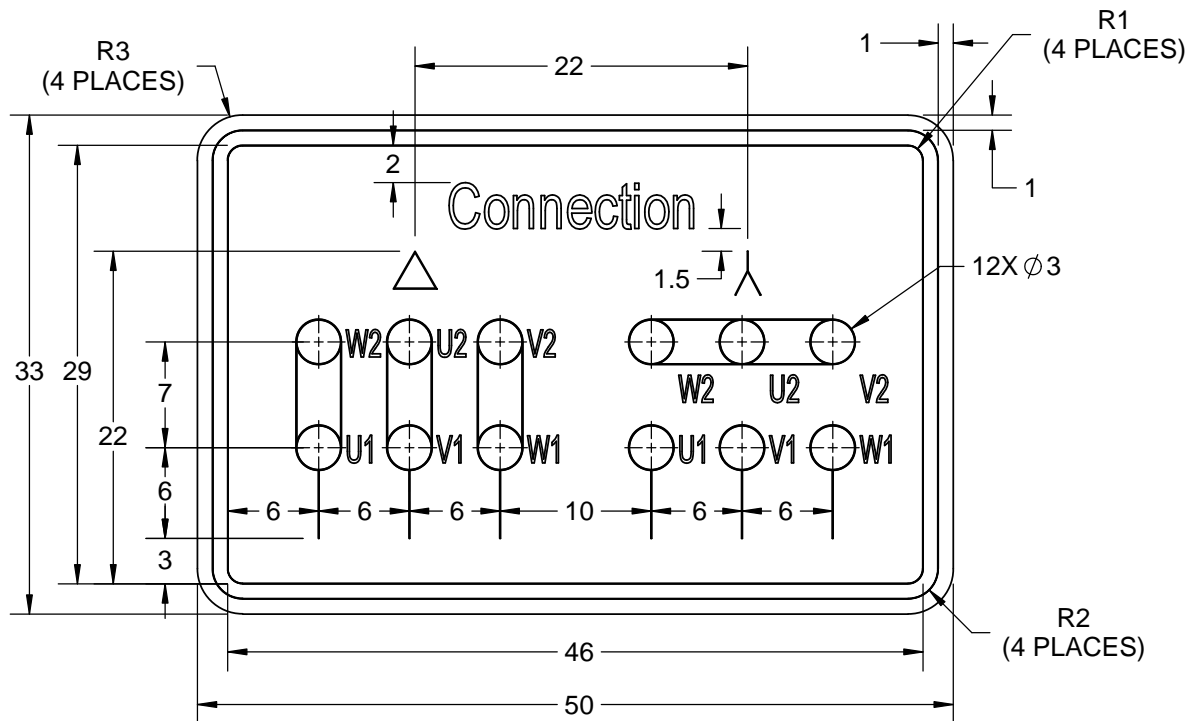


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|                              |                           |                           |
|------------------------------|---------------------------|---------------------------|
| DRAWING REVISION<br><b>A</b> | REVISION BY<br><b>SN</b>  | DATE<br><b>13/01/2017</b> |
| ECO<br><b>ECO-0116390</b>    | APPROVED BY<br><b>SBD</b> | DATE<br><b>13/01/2017</b> |

ECO DESCRIPTION  
**NEW DRAWING RELEASE**

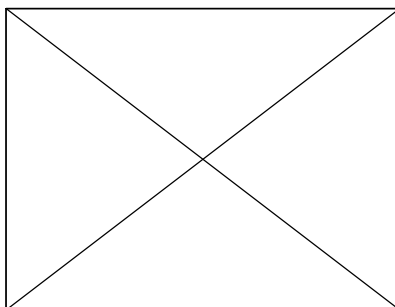
| GEOMETRIC TOLERANCE |         |      |
|---------------------|---------|------|
| LINEAR DIM          | >0~6    | ±0.1 |
|                     | >6~30   | ±0.2 |
|                     | >30~120 | ±0.3 |




**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<br><b>SN</b> |  <b>Regal Beloit America, Inc.</b> |                                     |                        |
|                       |  |                                     |                        |
|                       | DESCRIPTION<br><b>CONN DIAGRAM-NAMEPLATE</b>   |                                     |                        |
|                       | MATERIAL   |                                     | PROCESS/FINISH         |
|                       | SIZE<br><b>A</b>   | DRAWING NUMBER<br><b>8442000085</b> | SHEET<br><b>1 OF 1</b> |

**Model No.** TCN0113A1141GAC010

| 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>K</sub> /T <sub>N</sub><br>[pu] |
|----------|---------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|----|-------|-------|---------------|-------|-------|--|--|--|
| 400      | Δ             | 50        | 11        | 15        | 22.3     | 977        | 109.33    | IE3         | 5/4FL            | FL | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL | 5.6                                    | 2.0                                    | 2.6                                    |
|          |               |           |           |           |          |            |           |             |                  |    |       |       |               |       |       |  |  |  |

|                                  |                    |   |  |
|----------------------------------|--------------------|---|--|
| Motor type                       | TCN                | Degree of protection                      | IP 55                                      |
| Enclosure                        | TEFC               | Mounting type                             | IM V1                                      |
| Frame Material                   | Cast Iron          | Cooling method                            | IC 411                                     |
| Frame size                       | 160L               | Motor weight - approx.                    | 169 kg                                     |
| Duty                             | S1                 | Gross weight - approx.                    | 189 kg                                     |
| Voltage variation *              | ± 10%              | Motor inertia                             | 0.1811 kgm <sup>2</sup>                    |
| Frequency variation *            | ± 5%               | Load inertia                              | Customer to Provide                        |
| Combined variation *             | 10%                | Vibration level                           | 2.2 mm/s                                   |
| Design                           | N                  | Noise level ( 1meter distance from motor) | 61 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 +40 °C      | Type of coupling                          | Direct                                     |
| Temperature rise (by resistance) | 80 [ 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    | Ex nA              | Standard rotation                         | Clockwise form DE                          |
| Zone classification              | Zone 2             | Paint shade                               | RAL 5014                                   |
| Gas group                        | IIC                | Accessories                               |  |
| Temperature class                | T3                 | Accessory - 1                             | PTC 150°C                                  |
| Rotor type                       | Aluminum Die cast  | Accessory - 2                             | -  |
| Bearing type                     | Anti-friction ball | Accessory - 3                             | -  |
| DE / NDE bearing                 | 6309-2Z / 6209-2Z  | Terminal box position                     | TOP  |
| Lubrication method               | Greased for life   | Maximum cable size/conduit size           | 1R x 3C x 35mm <sup>2</sup> /2 X M32 x 1.5 |
| Type of grease                   | NA                 | Auxiliary terminal box                    | NA   |

I<sub>A</sub>/I<sub>N</sub> - Locked Rotor Current / Rated Current

T<sub>K</sub>/T<sub>N</sub> - Breakdown Torque / Rated Torque

T<sub>A</sub>/T<sub>N</sub> - Locked Rotor Torque / Rated Torque

**NOTE**

ATEX/IEC Ex certified as per IEC/EN 60079-0; IEC/EN 60079-15

All performance values at rated voltage and frequency.

All performance parameters are subjected to standard tolerance as per IEC 60034-1

\* Voltage, Frequency and combined variation are as per IEC60034-1

Technical data are subject to change. There may be slight variations between calculated values in this datasheet and the motor nameplate figures.

| Efficiency | Europe         | China | India | Aus/Nz    | Brazil | Global IEC     |
|------------|----------------|-------|-------|-----------|--------|----------------|
| Standards  | IEC:60034-30-1 | -     | -     | GEMS 2019 | -      | IEC:60034-30-1 |

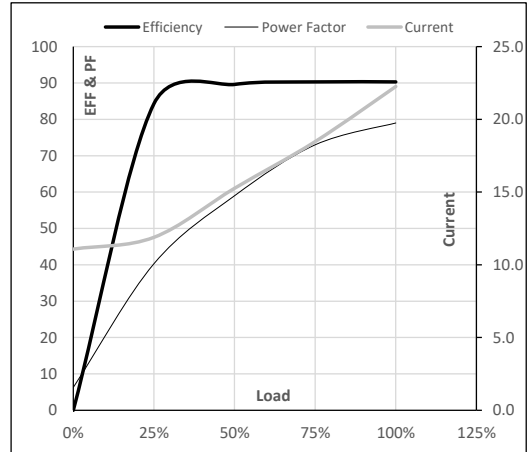
**Model No.** TCN0113A1141GAC010

| Enclosure | U<br>(V) | $\Delta$ / 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      | 400      | $\Delta$             | 50        | 11        | 15        | 22.3     | 977        | 11.15      | 109.33    | IE3         | 40          | S1   | 1000             | 0.1811                          | 169            |

**Motor Load Data**

| Load Point   |       | NL   | 1/4FL | 1/2FL | 3/4FL | FL    | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current      | A     | 11.1 | 11.9  | 15.3  | 18.5  | 22.3  |       |
| Torque       | Nm    | 0.0  | 26.9  | 54.0  | 81.5  | 109.3 |       |
| Speed        | r/min | 1000 | 995   | 989   | 984   | 977   |       |
| Efficiency   | %     | 0.0  | 84.3  | 89.6  | 90.3  | 90.3  |       |
| Power Factor | %     | 6.3  | 40.3  | 59.0  | 73.0  | 79.0  |       |

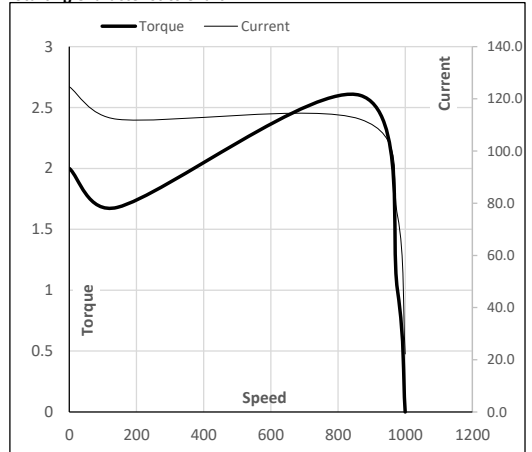
**Performance vs Load Chart**



**Motor Speed Torque Data**

| Load Point |       | LR    | P-Up  | BD   | Rated | NL   |
|------------|-------|-------|-------|------|-------|------|
| Speed      | r/min | 0     | 143   | 866  | 977   | 1000 |
| Current    | A     | 124.6 | 112.2 | 75.3 | 22.3  | 11.1 |
| Torque     | pu    | 2.0   | 1.7   | 2.6  | 1     | 0    |

**Starting Characteristics Chart**



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

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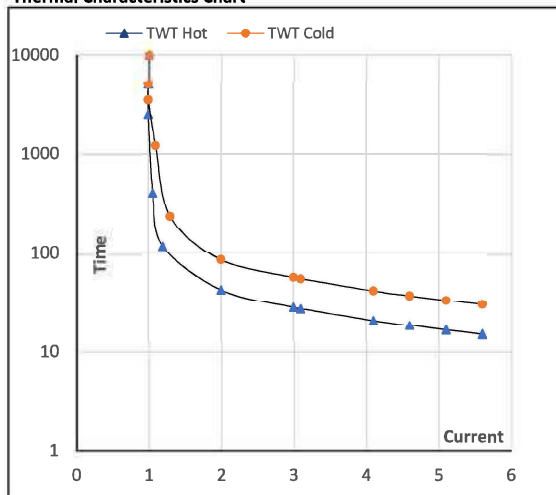
Model No. TCN0113A1141GAC010

| 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      | 400      | Δ             | 50        | 11        | 15.0      | 22.3     | 977        | 11.15      | 109.33    | IE3         | 40          | S1   | 1000             | 0.1811                          | 169            |

**Motor Speed Torque Data**

| 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 | 42             | 28             | 22             | 19             | 17             | 15  |
| TWT Cold                | s  | 10000 | 84             | 56             | 43             | 38             | 35             | 30  |
| Current                 | pu | 1     | 2              | 3              | 4              | 4.5            | 5              | 5.6 |

**Thermal Characteristics Chart**



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

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