

PRODUCT INFORMATION PACKET



Model No: TCN0901A1141GAC010

Catalog No: TCN0901A1141GAC010

TerraMAX® Cast Iron Motor, 120 HP, 3 Ph, 50 Hz, 400 V, 3000 RPM, 280M Frame, TEFC





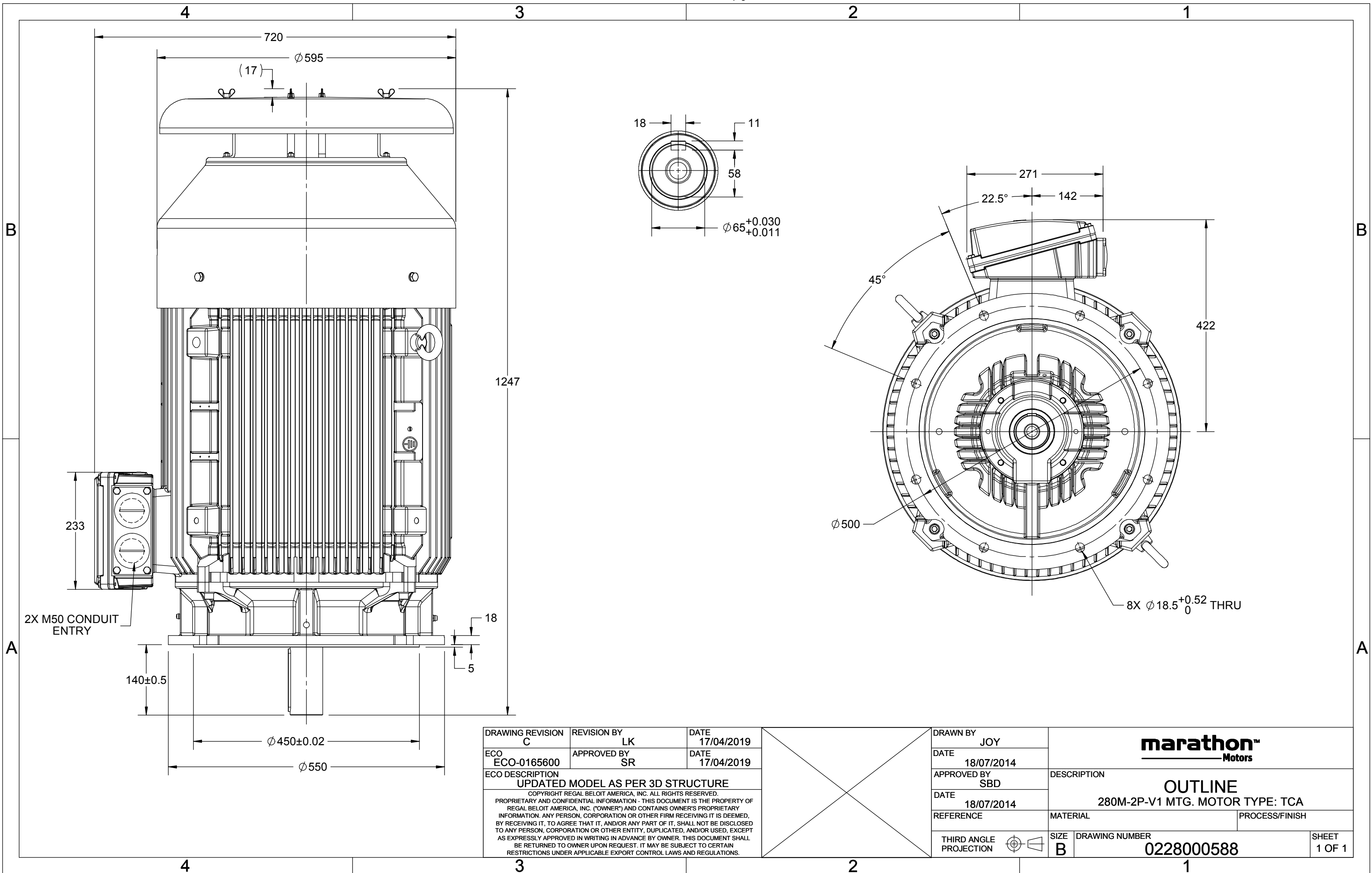
Nameplate Specifications

| | | | |
|------------------------|---------------|----------------------------|-----------------------------|
| Phase | 3 | Output HP | 120 Hp |
| Output KW | 90.0 kW | Voltage | 400 V |
| Speed | 2982 r/min | Service Factor | 1 |
| Frame | 280M | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Efficiency | 95 % |
| Ambient Temperature | 40 °C | Frequency | 50 Hz |
| Current | 153.6 A | Power Factor | 0.89 |
| Duty | S1 | Insulation Class | F |
| 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 | IE3 |

Technical Specifications

| | | | |
|-----------------------|---------------|-----------------------|----------------|
| Electrical Type | Squirrel Cage | Starting Method | Direct On Line |
| Poles | 2 | Rotation | Bi-Directional |
| Mounting | V1 | Motor Orientation | Shaftdown |
| Drive End Bearing | C3 | Opp Drive End Bearing | C3 |
| Frame Material | Cast Iron | Shaft Type | Keyed |
| Overall Length | 1246 mm | Frame Length | 600 mm |
| Shaft Diameter | 65 mm | Shaft Extension | 140 mm |
| Assembly/Box Mounting | Top | | |
| Outline Drawing | 0228000588 | Connection Drawing | 8442000085 |

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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. | | | | |
| | 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. TCN0901A1141GAC010

| 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] |
|----------|---------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|----|-------|-------|---------------|-------|-------|--|--|--|
| | | | | | | | | | 5/4FL | FL | 3/4FL | 1/2FL | FL | 3/4FL | 1/2FL | | | |
| 400 | Δ | 50 | 90 | 120 | 153.6 | 2982 | 286.61 | IE3 | - | 95 | 95 | 93.9 | 0.89 | 0.86 | 0.78 | 7.6 | 2.1 | 3.6 |
| | | | | | | | | | | | | | | | | | | |

| | | | |
|----------------------------------|-----------------------------|---|--|
| Motor type | TCN | Degree of protection | IP 55 |
| Enclosure | TEFC | Mounting type | IM V1 |
| Frame Material | Cast Iron | Cooling method | IC 411 |
| Frame size | 280M | Motor weight - approx. | 748 kg |
| Duty | S1 | Gross weight - approx. | 783 kg |
| Voltage variation * | ± 10% | Motor inertia | 1.1811 kgm ² |
| 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) | 76 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 | 6314 C3 / 6314 C3 | Terminal box position | TOP |
| Lubrication method | Regreasable | Maximum cable size/conduit size | 1R x 3C x 95mm ² /2 x M50 x 1.5 |
| Type of grease | CHEVRON SRI-2 or Equivalent | Auxiliary terminal box | NA |

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

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.

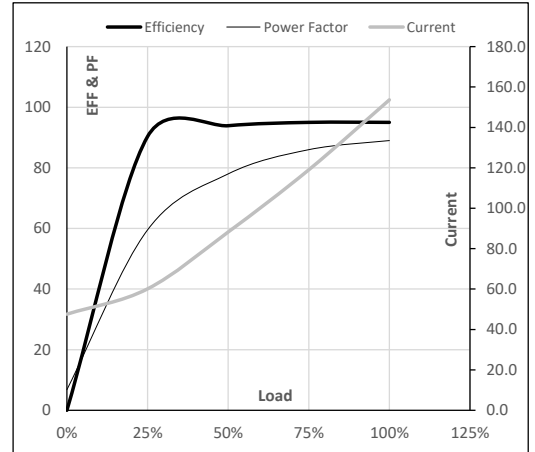
| Efficiency | Europe | China | India | Aus/Nz | Brazil | Global IEC |
|------------|----------------|-------|-------|-----------|--------|----------------|
| Standards | IEC:60034-30-1 | - | - | GEMS 2019 | - | IEC:60034-30-1 |

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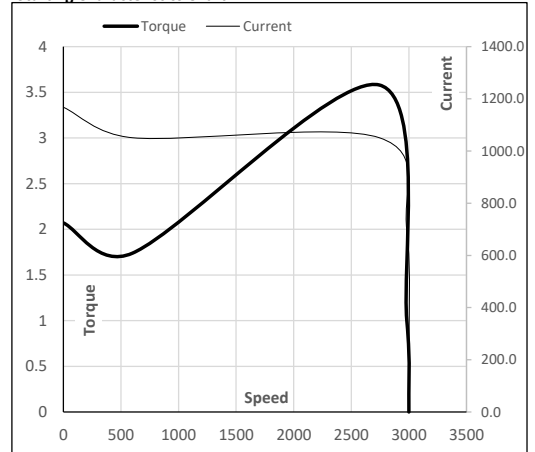
| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [RPM] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg-m ²] | Weight [kg] |
|-----------|----------|----------------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC | 400 | Δ | 50 | 90 | 120 | 153.6 | 2982 | 29.23 | 286.61 | IE3 | 40 | S1 | 1000 | 1.1811 | 748 |

Motor Load Data

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current | A | 47.6 | 60.1 | 88.2 | 119.0 | 153.6 | |
| Torque | Nm | 0.0 | 71.3 | 142.8 | 214.6 | 286.6 | |
| Speed | r/min | 3000 | 2995 | 2991 | 2986 | 2982 | |
| Efficiency | % | 0.0 | 90.3 | 93.9 | 95.0 | 95.0 | |
| Power Factor | % | 6.8 | 59.5 | 78.0 | 86.0 | 89.0 | |

Performance vs Load Chart

Motor Speed Torque Data

| Load Point | | LR | P-Up | BD | Rated | NL |
|------------|-------|--------|--------|-------|-------|------|
| Speed | r/min | 0 | 600 | 2743 | 2982 | 3000 |
| Current | A | 1167.7 | 1050.9 | 696.0 | 153.6 | 47.6 |
| Torque | pu | 2.1 | 1.7 | 3.6 | 1 | 0 |

Starting Characteristics Chart

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

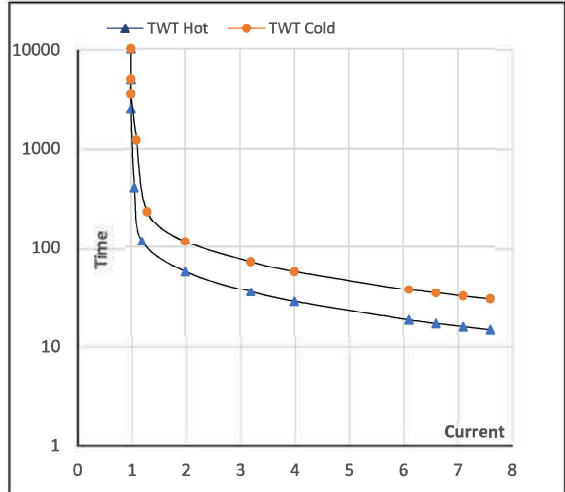
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| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [rpm] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg-m ²] | Weight [kg] |
|-----------|----------|----------------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC | 400 | Δ | 50 | 90 | 120.0 | 153.6 | 2982 | 29.23 | 286.61 | IE3 | 40 | S1 | 1000 | 1.1811 | 748 |

Motor Speed Torque Data

| Load | FL | I ₁ | I ₂ | I ₃ | I ₄ | I ₅ | LR |
|----------|---------|----------------|----------------|----------------|----------------|----------------|-----|
| TWT Hot | s 10000 | 57 | 39 | 29 | 27 | 25 | 15 |
| TWT Cold | s 10000 | 114 | 80 | 57 | 55 | 53 | 30 |
| Current | pu | 1 | 2 | 4 | 5 | 5.5 | 7.6 |

Thermal Characteristics Chart

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

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