

PRODUCT INFORMATION PACKET

Model No: SCA0222A3141GAAD01

Catalog No: SCA0222A3141GAAD01

22kW, General Purpose Low Voltage IEC Motor, 3 phase, 4 Pole, 415V, B35, 50Hz, 91.6%, 180L Frame, TEFC
Cast Iron IE2 Efficiency Motors





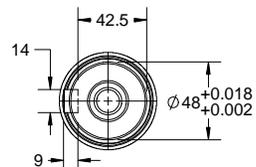
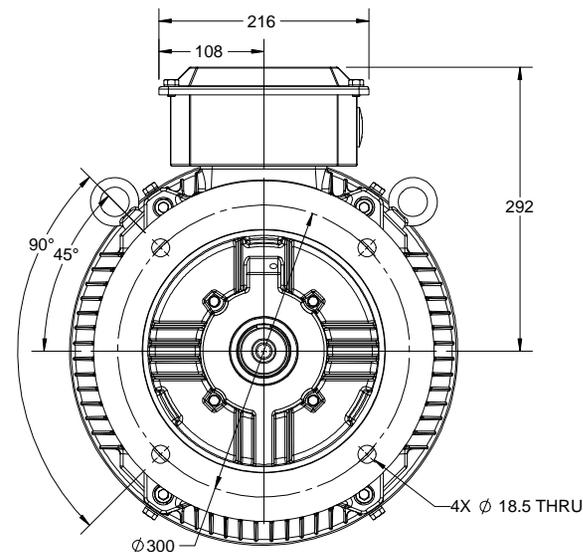
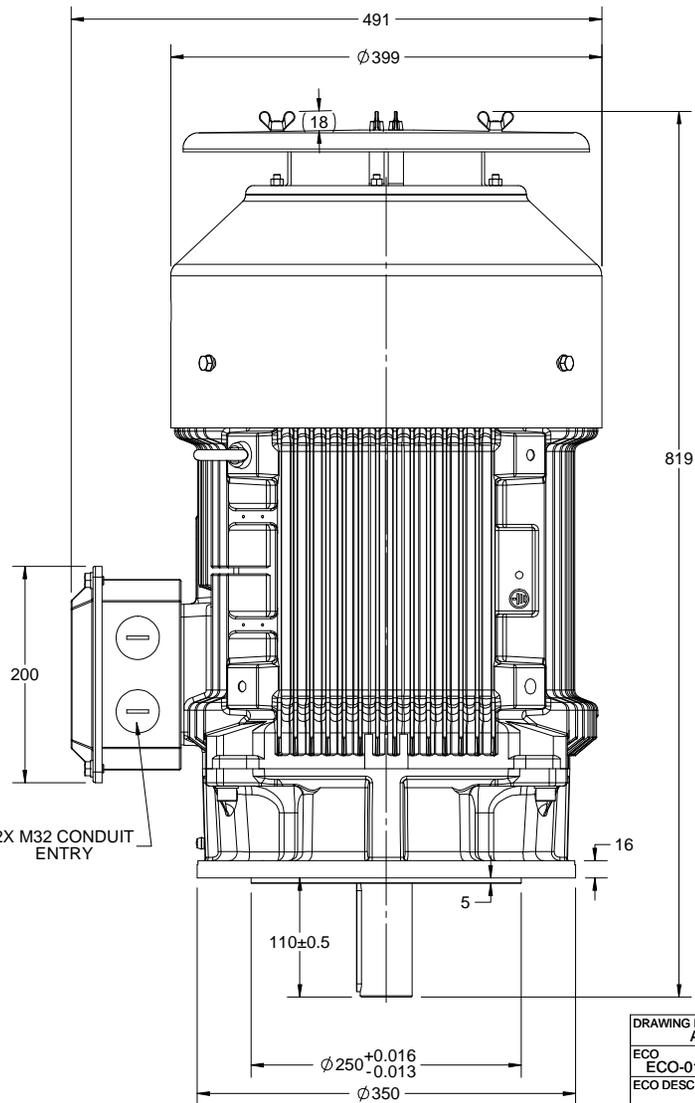
Nameplate Specifications

| | | | |
|----------------------------|---------------|------------------------|------------------------------------|
| Output HP | 30 Hp | Output KW | 22.0 kW |
| Frequency | 50 Hz | Voltage | 415 V |
| Current | 38.8 A | Speed | 1471 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 91.6 % | Power Factor | 0.86 |
| Duty | S1 | Insulation Class | F |
| Frame | 180L | Enclosure | Totally Enclosed Fan Cooled |
| Ambient Temperature | 50 °C | Drive End Bearing Size | 6311 |
| Opp Drive End Bearing Size | 6211 | UL | No |
| CSA | No | CE | Yes |
| IP Code | 55 | | |

Technical Specifications

| | | | |
|-----------------------|----------------------|-----------------------|-----------------------|
| Electrical Type | Squirrel Cage | Starting Method | Direct On Line |
| Poles | 4 | Rotation | Bi-Directional |
| Mounting | V1 | Motor Orientation | Horizontal |
| Drive End Bearing | 2z-C3 | Opp Drive End Bearing | 2z-C3 |
| Frame Material | Cast Iron | Shaft Type | Keyed |
| Overall Length | 819 mm | Frame Length | 366 mm |
| Shaft Diameter | 48 mm | Shaft Extension | 110 mm |
| Assembly/Box Mounting | TOP | | |
| Outline Drawing | 0218000852 | Connection Drawing | 8442000085 |

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| | | |
|--|--------------------|--------------------|
| DRAWING REVISION A | REVISION BY VS | DATE 20/08/2018 |
| ECO ECO-0150628 | APPROVED BY JAY | DATE 20/08/2018 |
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| | | |
|---------------------------|--|-------------------------------------|
| DRAWN BY VS | marathon Motors | |
| DATE 20/08/2018 | | |
| APPROVED BY JAY | DESCRIPTION OUTLINE 180L FR-V1-MTG MOTOR TYPE:SCA | |
| DATE 20/08/2018 | MATERIAL | PROCESS/FINISH |
| REFERENCE | SIZE B | DRAWING NUMBER 0218000852 |
| THIRD ANGLE PROJECTION | SHEET 1 OF 1 | |



Model No. SCA0222A3141GAAD01

| U (V) | Δ / Y Conn | f (Hz) | P | | I [A] | n [RPM] | T [Nm] | IE Class | % EFF at __ load | | | | PF at __ load | | | I _w /I _N [pu] | T _k /T _N [pu] | T _k /T _N [pu] |
|----------|---------------|-----------|------|------|----------|------------|-----------|-------------|------------------|------|-------|-------|---------------|-------|-------|--|--|--|
| | | | [kW] | [hp] | | | | | S/4FL | FL | 3/4FL | 1/2FL | FL | 3/4FL | 1/2FL | | | |
| 415 | Δ | 50 | 22 | 30 | 38.8 | 1471 | 145.53 | IE2 | - | 91.6 | 91.6 | 92.1 | 0.86 | 0.81 | 0.71 | 6.2 | 2.6 | 3.0 |
| | | | | | | | | | | | | | | | | | | |

| | | | |
|----------------------------------|--------------------|---|--|
| Motor type | SCA | Degree of protection | IP 55 |
| Enclosure | TEFC | Mounting type | IM V1 |
| Frame Material | Cast Iron | Cooling method | IC 411 |
| Frame size | 180L | Motor weight - approx. | 230 kg |
| Duty | S1 | Gross weight - approx. | 250 kg |
| Voltage variation * | ± 10% | Motor inertia | 0.1694 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) | 72 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) | 6/10 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 | Accessory - 3 | - |
| DE / NDE bearing | 6311-2Z / 6211-2Z | Terminal box position | TOP |
| Lubrication method | Greased for life | Maximum cable size/conduit size | 1R x 3C x 35mm ² /2 X M32 x 1.5 |
| Type of grease | NA | Auxiliary terminal box | NA |

I_w/I_N - Locked Rotor Current / Rated Current

T_k/T_N - Breakdown Torque / Rated Torque

T_k/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 | - | - | - |



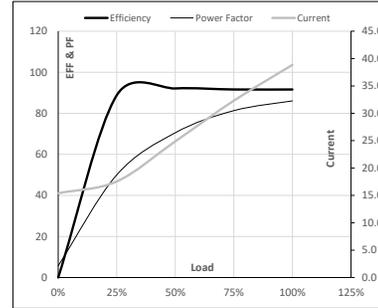
Model No. SCA0222A3141GAAD01

| 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 | 415 | Δ | 50 | 22 | 30 | 38.8 | 1471 | 14.84 | 145.53 | IE2 | 50 | S1 | 1000 | 0.1694 | 230 |

Motor Load Data

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current | A | 15.4 | 17.6 | 24.9 | 32.3 | 38.8 | |
| Torque | Nm | 0.0 | 35.8 | 71.9 | 108.3 | 145.5 | |
| Speed | r/min | 1500 | 1493 | 1486 | 1479 | 1471 | |
| Efficiency | % | 0.0 | 88.8 | 92.1 | 91.6 | 91.6 | |
| Power Factor | % | 5.7 | 50.0 | 70.5 | 81.3 | 86.0 | |

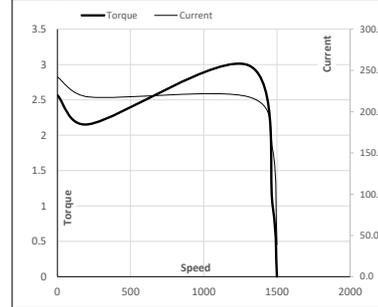
Performance vs Load Chart



Motor Speed Torque Data

| Load Point | | LR | P-Up | BD | Rated | NL |
|------------|-------|-------|-------|-------|-------|------|
| Speed | r/min | 0 | 214 | 1308 | 1471 | 1500 |
| Current | A | 242.1 | 217.9 | 153.8 | 38.8 | 15.4 |
| Torque | pu | 2.6 | 2.2 | 3.0 | 1 | 0 |

Starting Characteristics Chart



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

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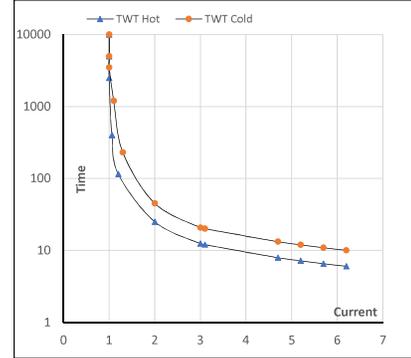
Model No. SCA0222A3141GAAD01

| 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 | 415 | Δ | 50 | 22 | 30 | 38.8 | 1471 | 14.84 | 145.53 | IE2 | 50 | S1 | 1000 | 0.1694 | 230 |

Motor Speed Torque Data

| Load | FL | I ₁ | I ₂ | I ₃ | I ₄ | I ₅ | LR | |
|----------|---------|----------------|----------------|----------------|----------------|----------------|-----|-----|
| TWT Hot | s 10000 | 25 | 12 | 11 | 8 | 7 | 6 | |
| TWT Cold | s 10000 | 45 | 21 | 18 | 12 | 11 | 10 | |
| Current | pu | 1 | 2 | 3 | 4 | 5 | 5.5 | 6.2 |

Thermal Characteristics Chart



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

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