

Technical Documentation

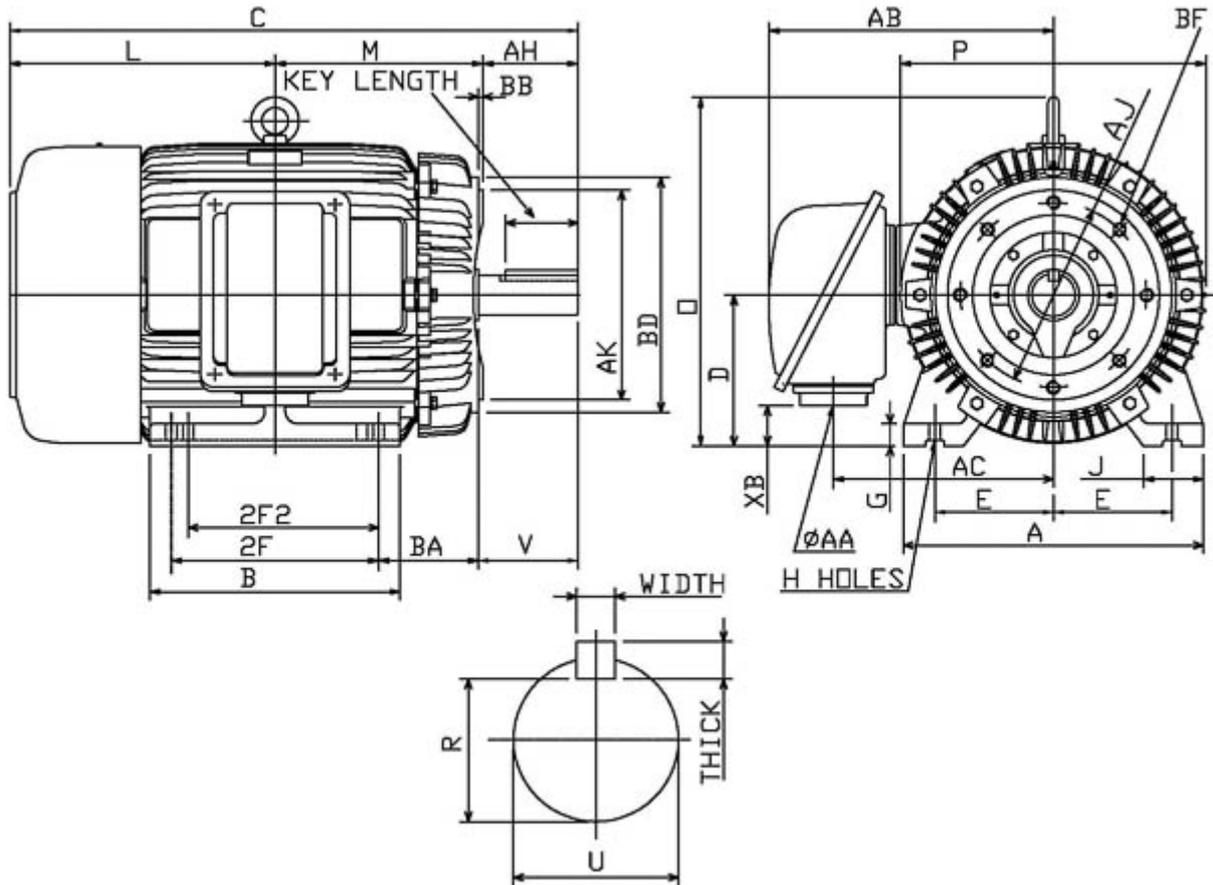
# **PDX05045C**

## **Optim TEFC | AEHH8N**

Date: July 2, 2021

**Dimensional Drawing**

|           |        |    |      |         |    |            |
|-----------|--------|----|------|---------|----|------------|
| Catalogue | Type   | HP | RPM  | Voltage | Hz | Frame Size |
| PDX05045C | AEHH8N | 50 | 1800 | 575     | 60 | 326TC(X)   |



| Mounting |     |      |      |      | A     | B     | C     | CL1 | CL2 | D | G   |
|----------|-----|------|------|------|-------|-------|-------|-----|-----|---|-----|
| E        | 2F1 | 2F2  | H    | BA   |       |       |       |     |     |   |     |
| 6.25     | 12  | 10.5 | 0.66 | 5.25 | 15.75 | 14.35 | 31.42 |     |     | 8 | 1.1 |

| J    | K | AK   | AJ | L     | M     | O     | P     | T    | BD    | BB   |
|------|---|------|----|-------|-------|-------|-------|------|-------|------|
| 3.15 |   | 12.5 | 11 | 14.92 | 11.04 | 16.27 | 16.54 | 2.32 | 13.58 | 0.25 |

| Terminal Housing |       |      |      |
|------------------|-------|------|------|
| AA               | AB    | AC   | XB   |
| 2 NPT            | 14.65 | 11.3 | 3.59 |

| Shaft Extension |       |      | Key   |       |        | Keyseat |
|-----------------|-------|------|-------|-------|--------|---------|
| N-W             | U     | V    | Width | Thick | Length | R       |
| 5.25            | 2.125 | 5.15 | 0.5   | 0.5   |        |         |

| Bearings |      | Weight Lbs | Drive Method                 | Dimensions |
|----------|------|------------|------------------------------|------------|
| DE       | NDE  |            |                              |            |
| 6312     | 6310 | 591        | Direct Coupling / Belt Drive | Inches     |

|   |                    |
|---|--------------------|
| <br>MOTORS (CANADA) INC. |                    |
|   |                    |
|   |                    |
|   | Date: July 2, 2021 |

### Technical Data Sheet

|                    |                         |
|--------------------|-------------------------|
| Motor Type: AEHH8N | Catalogue No: PDX05045C |
|--------------------|-------------------------|

#### Nameplate Information

|           |            |                |             |             |              |                |
|-----------|------------|----------------|-------------|-------------|--------------|----------------|
| HP        | Pole       | RPM            | Frame       | Voltage     | Hz           | Phase          |
| 50        | 4          | 1770           | 326TC(X)    | 575         | 60           | 3              |
| Enclosure | Ins. Class | Service Factor | Time Rating | NEMA Design | Rated Amb.   | Rated Altitude |
| TEFC      | F          | 1.15           | Continuous  | C           | -40 to 40 °C | <1000 m        |

#### Typical Performance

| Efficiency (%)    |                             |                                 |                                      | Power Factor (%)    |           |                                |
|-------------------|-----------------------------|---------------------------------|--------------------------------------|---------------------|-----------|--------------------------------|
| Full Load         |                             | 3/4 Load                        | 1/2 Load                             | Full Load           | 3/4 Load  | 1/2 Load                       |
| Nom.              | Min.                        |                                 |                                      |                     |           |                                |
| 94.50             | 93.60                       | 94.50                           | 94.00                                | 85.00               | 83.00     | 77.00                          |
| Torque            |                             |                                 |                                      | Current (A)         |           |                                |
| Full Load (lb-ft) | Locked Rotor (% FLT)        | Pull Up (% FLT)                 | Break Down (% FLT)                   | No Load             | Full Load | Locked Rotor                   |
| 148.31            | 230                         | 200                             | 250                                  | 14.6                | 46.6      | 290.40                         |
| NEMA KVA Code     | Inertia (WR <sup>2</sup> )  |                                 |                                      | Safe Stall Time (s) |           | Noise Level Sound Press. dB(A) |
|                   | Rotor (lb-ft <sup>2</sup> ) | NEMA Load (lb-ft <sup>2</sup> ) | Max. Allowable (lb-ft <sup>2</sup> ) | Cold                | Hot       |                                |
| G                 | 6.393                       | 39.00                           | 596.00                               | 17                  | 12        | 76.0                           |

#### VFD Duty Information

| Speed Range     |                 |                | VFD     |              | S.F.     |
|-----------------|-----------------|----------------|---------|--------------|----------|
| Constant Torque | Variable Torque | Constant Power | Carrier | Type         |          |
| 6-60Hz          | 3-60Hz          | 60-90Hz        | 0       | VPWM or CPWM | 1.0 Only |

#### Hazardous Locations Information

|  |
|--|
| CSA Certified  |
| Class I, Div 2, Groups B, C & D<br>Class I, Zone 2, Groups IIB+H2, IIB & IIA |
| Temp Code (Sinewave / VFD)      T3 / T3                                      |

#### Additional Certifications

|                     |
|---------------------|
| Other Certification |
|---------------------|

#### Additional Information

| Bearings |      | Approx. Weight |
|----------|------|----------------|
| DE       | NDE  | lbs            |
| 6312     | 6310 | 591            |

**Nameplate Drawing**

# Optim TEFC

|              |                |                 |           |                 |      |
|--------------|----------------|-----------------|-----------|-----------------|------|
| TYPE         | AEHH8N         | CAT. NO.        | PDX05045C |                 |      |
| OUTPUT       | 50 HP 37.30 kW | FRAME           | 326TC(X)  | TEFC            |      |
| R.P.M.       | 1770           | POLE            | 4         | INS.            | F    |
| VOLTS        | 575            | PHASE           | 3         | Hz              | 60   |
| AMPS         | 46.6           | CODE            | G         | S.F.            | 1.15 |
| AMBIENT      | 40 °C          | NOM. EFF. 94.50 |           | MIN. EFF. 93.60 |      |
| BEARINGS     | 6312 / 6310    |                 |           | RATING Cont.    |      |
| SER. NO.     | TBD            | DESIGN          | C         | WT. 591 LBS     |      |
| PWM VFD DUTY | VT             | CT              | CP        | S.F.            |      |
|              | 3-60Hz         | 6-60Hz          | 60-90Hz   | 1.0 Only        |      |

**Connection Diagram**

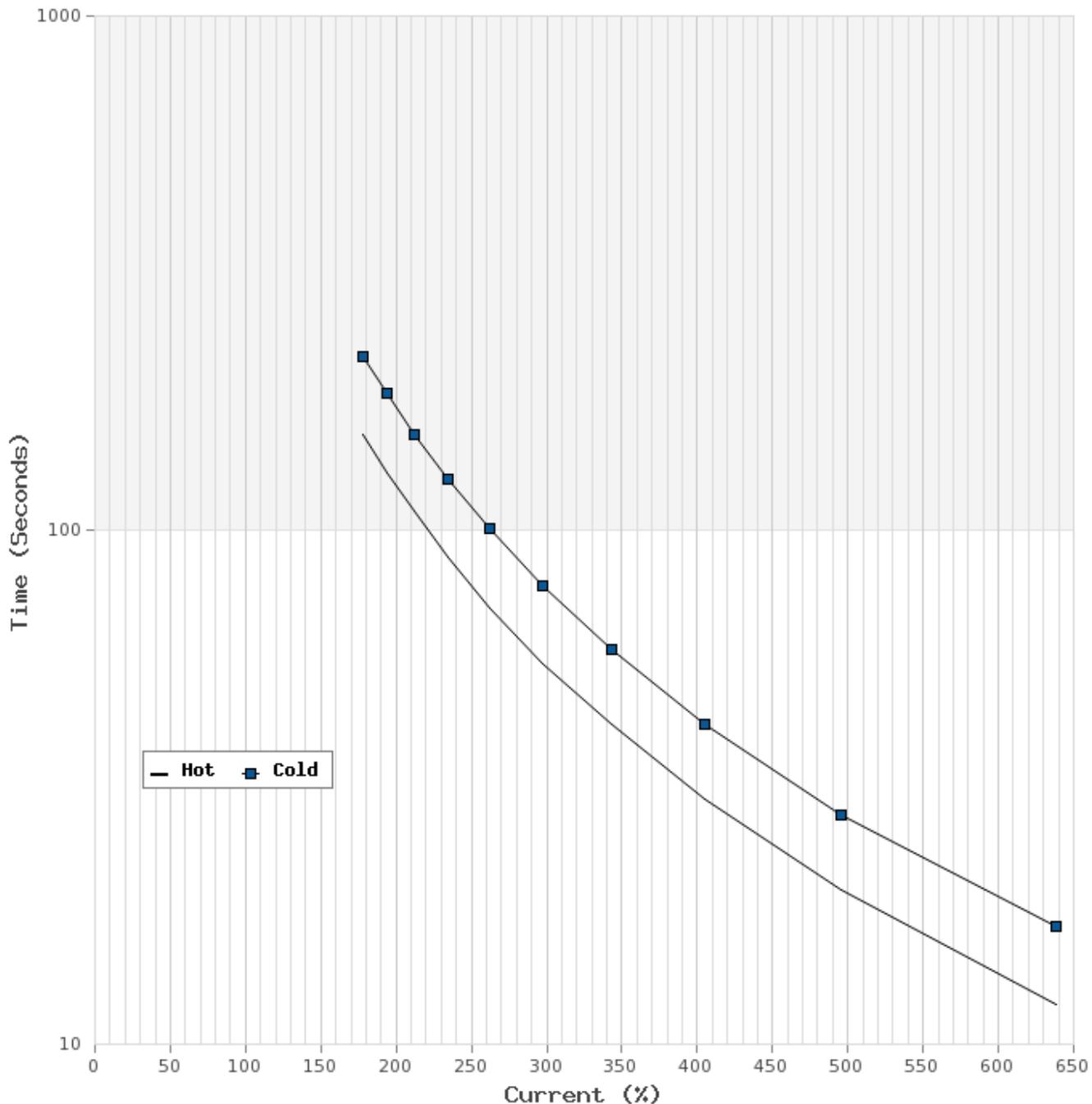


| 3 LEAD  |       | SINGLE VOLTAGE |    |    | DELTA |
|---------|-------|----------------|----|----|-------|
| VOLTAGE | CONN. | L1             | L2 | L3 |       |
| -       | DELTA | 1              | 2  | 3  |       |

WD\_3D

### Thermal Limit Curves

|                    |           |                         |      |                    |          |
|--------------------|-----------|-------------------------|------|--------------------|----------|
| Motor Type: AEHH8N |           | Catalogue No: PDX05045C |      | Family: Optim TEFC |          |
| HP                 | 50        | Safe Stall Time         |      | Full Load A        | 46.6 A   |
| Voltage            | 575V 60Hz | Hot                     | 12 s | % Inrush           | 623 %    |
| RPM                | 1800      | Cold                    | 17 s | Locked Rotor A     | 290.40 A |



**T-N and I-N Curves**

|                    |           |                         |              |                    |         |
|--------------------|-----------|-------------------------|--------------|--------------------|---------|
| Motor Type: AEHH8N |           | Catalogue No: PDX05045C |              | Family: Optim TEFC |         |
| HP                 | 50        | Full Load T             | 148.31 lb-ft | Full Load A        | 46.6 A  |
| Voltage            | 575V 60Hz | Locked Rotor T          | 230 %        | Locked Rotor A     | 290.4 A |
| RPM                | 1800      | Pull Up T               | 200 %        | Break Down T       | 250 %   |

