

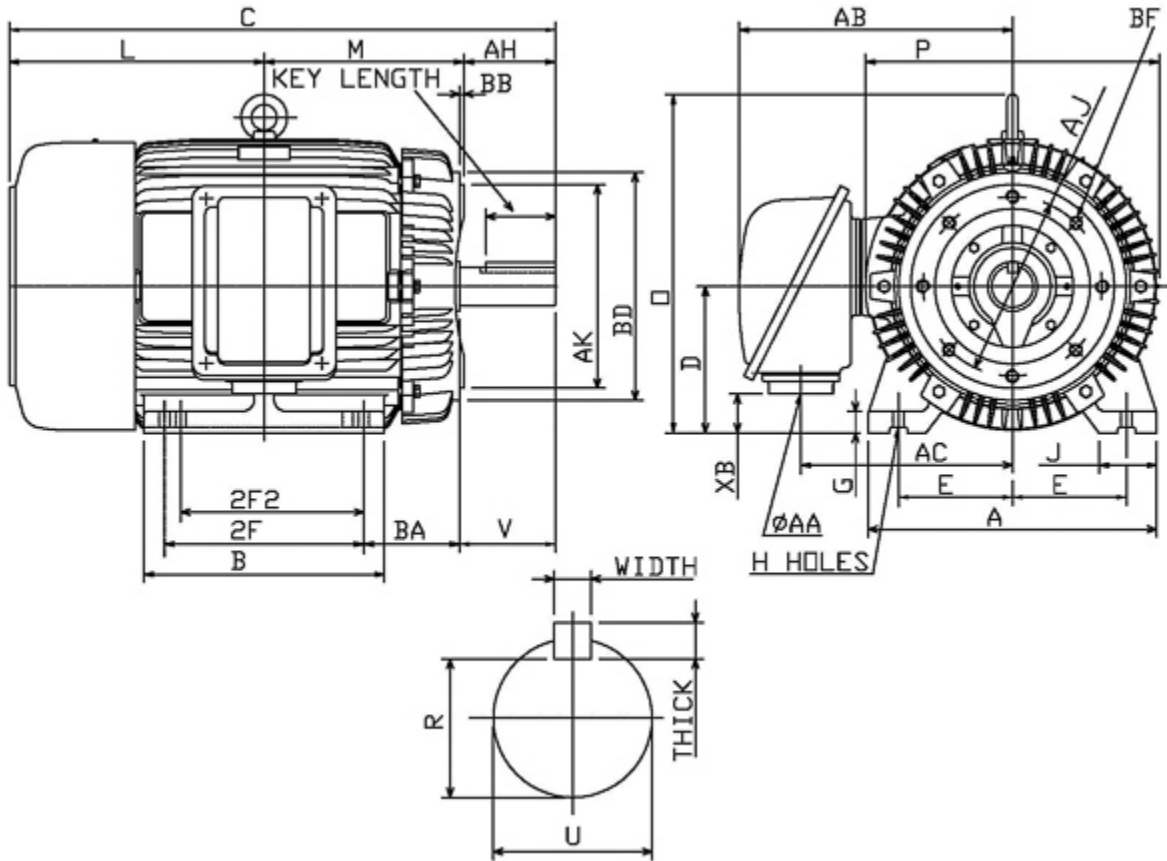
Technical Documentation

**PDH1002C**  
**Optim TEFC | AEHH8N**

Date: July 10, 2017

**Dimensional Drawing**

|           |        |     |      |    |            |             |    |      |
|-----------|--------|-----|------|----|------------|-------------|----|------|
| Catalogue | Model  | HP  | Pole | kW | Rating     | Voltage     | Hz | RPM  |
| PDH1002C  | AEHH8N | 100 | 2    | 75 | Continuous | 230 / 460 V | 60 | 3600 |



| Frame Size       | Mounting |       |          |         |                    | A           | B          | C     | CD              | D          |           |
|------------------|----------|-------|----------|---------|--------------------|-------------|------------|-------|-----------------|------------|-----------|
|                  | E        | 2F    | 2F2      | H       | BA                 |             |            |       |                 |            |           |
| 405TSC           | 8        | 13.75 | 12.25    | 0.81    | 6.62               | 19.7        | 16.75      | 34.8  |                 | 10         |           |
| G                | J        | K     | L        | M       | O                  | P           | T          | Key   |                 |            | Keyseat   |
| 1.55             | 3.95     |       | 17.05    | 13.27   | 20.04              | 20.08       | 2.76       | Width | Thick           | Length     | R         |
|                  |          |       |          |         |                    |             |            | 0.5   | 0.5             | 2.78       | 1.845     |
| Terminal Housing |          |       |          | Aux Box |                    | C/D Flange  |            |       |                 |            |           |
| AA               | AB       | AC    | XB       | AE      | AX                 | BB          | AH         | AK    | BD              | AJ         | BF        |
| 3 NPT            | 19.37    | 14.76 | 1.81     |         |                    | 0.25        | 4          | 12.5  | 15.27           | 11         | 5/8-11UNC |
| Shaft Extension  |          |       | Bearings |         | Approx. Weight Lbs | SPL dBA/3ft | Ins. Class | S.F.  | Drive Method    | Dimensions |           |
| N-W              | U        | V     | DE       | NDE     |                    |             |            |       |                 |            |           |
| 4.25             | 2.125    | 4.15  | 6313C3   | 6313C3  | 1225               | 85          | F          | 1.15  | Direct Coupling | Inches     |           |

### Technical Data Sheet

Motor Type: AEHH8N

Catalogue No: PDH1002C

#### Nameplate Information

|           |            |                |             |             |              |                |
|-----------|------------|----------------|-------------|-------------|--------------|----------------|
| HP        | Pole       | RPM            | Frame       | Voltage     | Hz           | Phase          |
| 100       | 2          | 3560           | 405TSC      | 230 / 460   | 60           | 3              |
| Enclosure | Ins. Class | Service Factor | Time Rating | NEMA Design | Rated Amb.   | Rated Altitude |
| TEFC      | F          | 1.15           | Continuous  | B           | -40 to 40 °C | <3300 ft       |

#### Typical Performance

| Efficiency (%)    |                             |                                 |                                      | Power Factor (%)    |               |                                |
|-------------------|-----------------------------|---------------------------------|--------------------------------------|---------------------|---------------|--------------------------------|
| Full Load         |                             | 3/4 Load                        | 1/2 Load                             | Full Load           | 3/4 Load      | 1/2 Load                       |
| Nom.              | Min.                        |                                 |                                      |                     |               |                                |
| 95.4              | 94.5                        | 95.8                            | 95.4                                 | 92.0                | 91.5          | 88.5                           |
| Torque            |                             |                                 |                                      | Current (A)         |               |                                |
| Full Load (lb-ft) | Locked Rotor (% FLT)        | Pull Up (% FLT)                 | Break Down (% FLT)                   | No Load             | Full Load     | Locked Rotor                   |
| 147.50            | 140                         | 125                             | 270                                  | 39.2 / 19.6         | 214.0 / 106.7 | 1450 / 725                     |
| 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                 | 10.773                      | 92.0                            | 213.0                                | 17                  | 12            | 85                             |

#### VFD Duty Information

| Speed Range     |                 |                | VFD     |              | S.F.     |
|-----------------|-----------------|----------------|---------|--------------|----------|
| Constant Torque | Variable Torque | Constant Power | Carrier | Type         |          |
| 6-60Hz          | 3-60Hz          | 60-60Hz        | ≤ 5 kHz | VPWM or CPWM | 1.0 Only |

#### Additional Information

| Bearings |        | Approx. Weight |
|----------|--------|----------------|
| DE       | NDE    | lbs            |
| 6313C3   | 6313C3 | 1225           |

#### Hazardous Locations Information

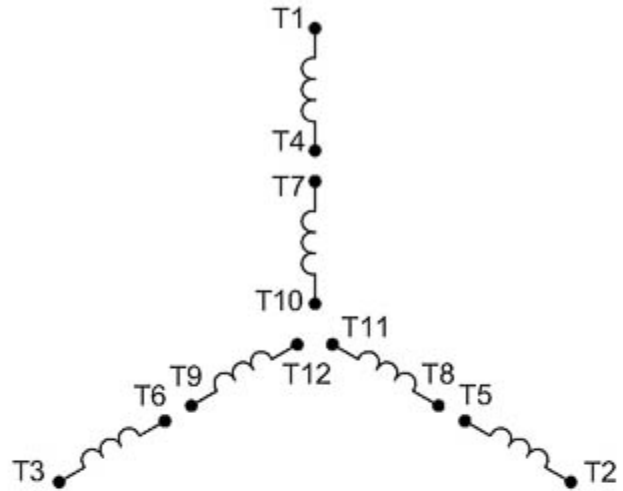
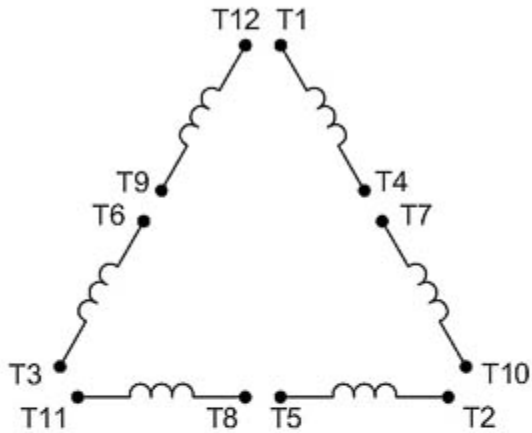
| CSA Certified  |          |
|--|----------|
| Class I, Div 2, Groups B, C & D<br>Class I, Zone 2, Groups IIB+H2, IIB & IIA |          |
| Temp Code (Sinewave / VFD)   | T3C / T3 |

**Nameplate Drawing**

# Optim TEFC

|              |                 |                |          |                |      |
|--------------|-----------------|----------------|----------|----------------|------|
| TYPE         | AEHH8N          | CAT. NO.       | PDH1002C |                |      |
| OUTPUT       | 100 HP 75 kW    | FRAME          | 405TSC   | TEFC           |      |
| R.P.M.       | 3560            | POLE           | 2        | INS.           | F    |
| VOLTS        | 230 / 460       | PHASE          | 3        | Hz             | 60   |
| AMPS         | 214.0 / 106.7   | CODE           | G        | S.F.           | 1.15 |
| AMBIENT      | 40 °C           | NOM. EFF. 95.4 |          | MIN. EFF. 94.5 |      |
| BEARINGS     | 6313C3 / 6313C3 |                |          | RATING Cont.   |      |
| SER. NO.     | TBD             | DESIGN         | B        | WT. 1225 LBS   |      |
| PWM VFD DUTY | VT              | CT             | CP       | S.F.           |      |
|              | 3-60Hz          | 6-60Hz         | 60-60Hz  | 1.0 Only       |      |

**Connection Diagram**

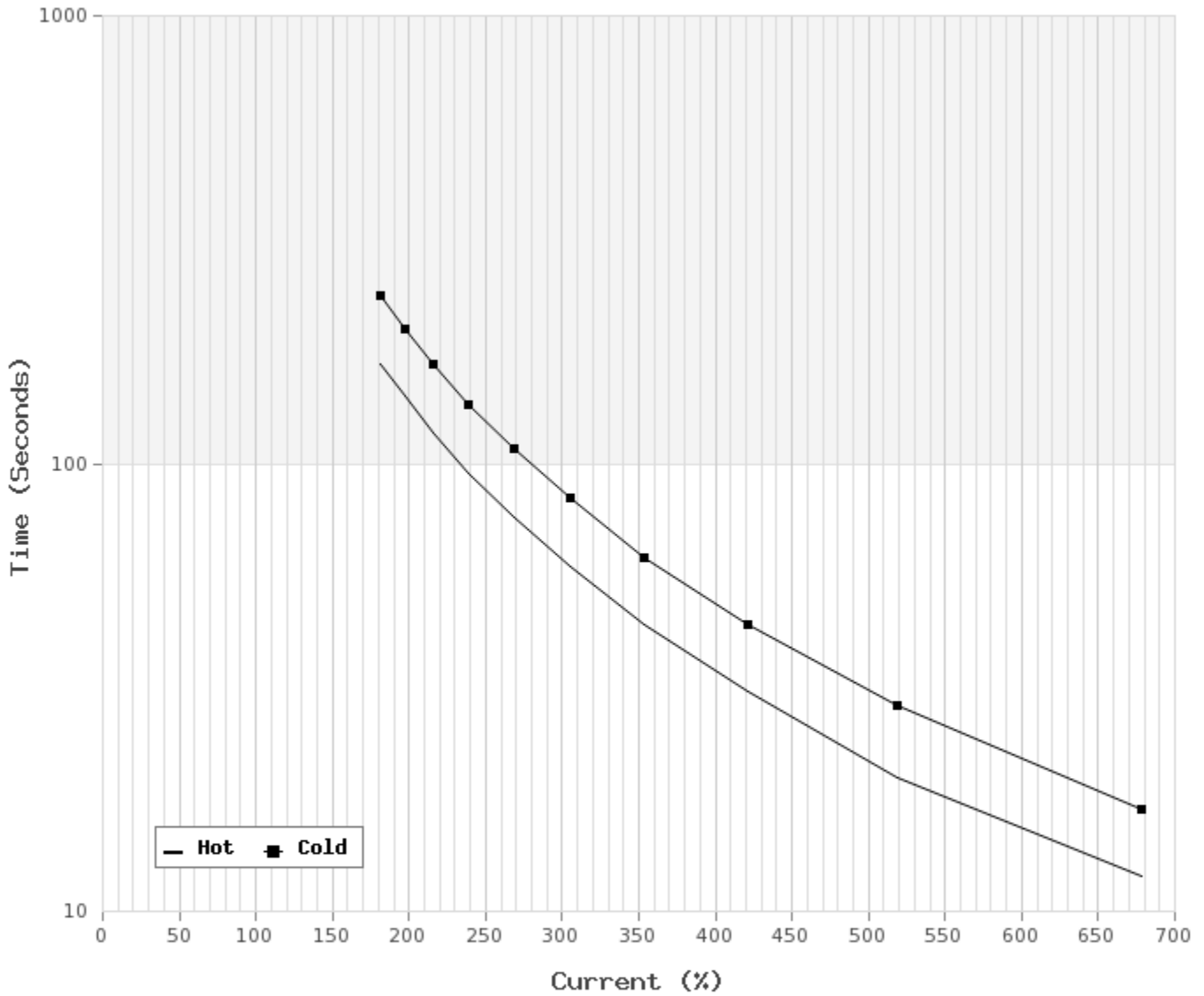


| 12 LEAD DUAL VOLTAGE WYE/DELTA |            |         |             |             |             |                         |
|--------------------------------|------------|---------|-------------|-------------|-------------|-------------------------|
| VOLTAGE                        | CONNECTION |         | L1          | L2          | L3          | JOIN                    |
| HIGH                           | START      | WYE     | 1           | 2           | 3           | 4&7,5&8,6&9<br>10&11&12 |
|                                | RUN        | DELTA   | 1,12        | 2,10        | 3,11        | 4&7,5&8,6&9             |
| LOW                            | START      | 2 WYE   | 1,7         | 2,8         | 3,9         | 4&5&6<br>10&11&12       |
|                                | RUN        | 2 DELTA | 1,6,7<br>12 | 2,4,8<br>10 | 3,5,9<br>11 |                         |

WD\_12YD

**Thermal Limit Curves**

|                    |                 |                        |      |                    |                 |
|--------------------|-----------------|------------------------|------|--------------------|-----------------|
| Motor Type: AEHH8N |                 | Catalogue No: PDH1002C |      | Family: Optim TEFC |                 |
| HP                 | 100             | Safe Stall Time        |      | Full Load A        | 214.0 / 106.7 A |
| Voltage            | 230 / 460V 60Hz | Hot                    | 12 s | Locked Rotor A     | 678 / 680 %     |
| RPM                | 3600            | Cold                   | 17 s | Locked Rotor A     | 1,450.0 / 725 A |



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

|                    |                 |                        |              |                    |                   |
|--------------------|-----------------|------------------------|--------------|--------------------|-------------------|
| Motor Type: AEHH8N |                 | Catalogue No: PDH1002C |              | Family: Optim TEFC |                   |
| HP                 | 100             | Full Load T            | 147.50 lb-ft | Full Load A        | 214.0 / 106.7 A   |
| Voltage            | 230 / 460V 60Hz | Locked Rotor T         | 140 %        | Locked Rotor A     | 1,450.0 / 725.0 A |
| RPM                | 3600            | Pull Up T              | 125 %        | Break Down T       | 270 %             |

