

# ABB BALDOR RELIANCE III

---

## Customer information packet

### VDRX25244T

20HP, 1770//1470RPM, 3PH, 60/50HZ, 256TC, XPF

Class - CLI GP C,D

Division - Division I

**Specifications**

|                                |                                                                                                            |
|--------------------------------|------------------------------------------------------------------------------------------------------------|
| Enclosure                      | XPFC                                                                                                       |
| Frame                          | 256TC                                                                                                      |
| Frame Material                 | Iron                                                                                                       |
| Frequency                      | 50.00 Hz<br>60.00 Hz                                                                                       |
| Haz Area Class and Group       | CLI GP C,D                                                                                                 |
| Haz Area Division              | Division I                                                                                                 |
| Motor Letter Type              | Three Phase                                                                                                |
| Output @ Frequency             | 15.000 HP @ 50 HZ<br>20.000 HP @ 60 HZ                                                                     |
| Phase                          | 3                                                                                                          |
| Synchronous Speed @ Frequency  | 1800 RPM @ 60 HZ                                                                                           |
| Voltage @ Frequency            | 380.0 V @ 50 HZ<br>230.0 V @ 60 HZ<br>190.0 V @ 50 HZ<br>460.0 V @ 60 HZ                                   |
| Agency Approvals               | CSA EEV<br>UL                                                                                              |
| Ambient Temperature            | 40 °C                                                                                                      |
| Auxiliary Box                  | NO AUXILLARY BOX                                                                                           |
| Auxiliary Box Lead Termination | None                                                                                                       |
| Base Indicator                 | No Mounting                                                                                                |
| Bearing Grease Type            | Polyrex EM (-20F +300F)                                                                                    |
| Blower                         | None                                                                                                       |
| Constant Torque Speed Range    | 6                                                                                                          |
| Current @ Voltage              | 52.000 A @ 208.0 V<br>48.000 A @ 230.0 V<br>44.000 A @ 190.0 V<br>24.000 A @ 460.0 V<br>22.000 A @ 380.0 V |
| Design Code                    | A                                                                                                          |
| Drip Cover                     | No Drip Cover                                                                                              |

**Part Detail**

|              |            |
|--------------|------------|
| Revision     | K          |
| Type         | AC         |
| Mech. spec.  |            |
| Base         |            |
| Status       | PRD/A      |
| Elec. spec.  | 09WGT459   |
| Layout       | 09LYF525   |
| Eff. date    | 02-14-2024 |
| CD Diagram   | CD0180     |
| Poles        | 04         |
| Leads        | 9#10       |
| Proprietary  | False      |
| Created date | 06-06-2019 |

|                                      |                            |
|--------------------------------------|----------------------------|
| <b>Duty Rating</b>                   | CONT                       |
| <b>Efficiency @ 100% Load</b>        | 93.0 %                     |
| <b>Electrically Isolated Bearing</b> | Not Electrically Isolated  |
| <b>Feedback Device</b>               | NO FEEDBACK                |
| <b>Haz Area Temp Code</b>            | T3C                        |
| <b>Heater Indicator</b>              | No Heater                  |
| <b>High Voltage Full Load Amps</b>   | 22.0 a                     |
| <b>Insulation Class</b>              | F                          |
| <b>Inverter Code</b>                 | Inverter Duty              |
| <b>IP Rating</b>                     | NONE                       |
| <b>KVA Code</b>                      | J                          |
| <b>Lifting Lugs</b>                  | Standard Lifting Lugs      |
| <b>Locked Bearing Indicator</b>      | Locked Bearing             |
| <b>Max Speed</b>                     | 2700 rpm                   |
| <b>Motor Lead Termination</b>        | Flying Leads               |
| <b>Motor Standards</b>               | NEMA                       |
| <b>Motor Type</b>                    | 0960M                      |
| <b>Mounting Arrangement</b>          | F1                         |
| <b>Number of Poles</b>               | 4                          |
| <b>Overall Length</b>                | 26.00 IN                   |
| <b>Power Factor</b>                  | 83                         |
| <b>Product Family</b>                | Hazardous Location Motor   |
| <b>Pulley Face Code</b>              | C-Face                     |
| <b>Rodent Screen</b>                 | None                       |
| <b>RoHS Status</b>                   | ROHS NON-COMPLIANT         |
| <b>Service Factor</b>                | 1.00                       |
| <b>Shaft Diameter</b>                | 1.625 IN                   |
| <b>Shaft Ground Indicator</b>        | No Shaft Grounding         |
| <b>Shaft Rotation</b>                | Reversible                 |
| <b>Speed</b>                         | 1770 rpm                   |
| <b>Speed Code</b>                    | Single Speed               |
| <b>Starting Method</b>               | Direct on line             |
| <b>Thermal Device - Bearing</b>      | None                       |
| <b>Thermal Device - Winding</b>      | Normally Closed Thermostat |

| Vibration Sensor Indicator | No Vibration Sensor |
|----------------------------|---------------------|
| Winding Thermal 1          | None                |
| Winding Thermal 2          | None                |

**Nameplate**

| NP1401XPSLEV |                            |        |              |       |   |          |                     |           |          |    |  |  |
|--------------|----------------------------|--------|--------------|-------|---|----------|---------------------|-----------|----------|----|--|--|
| NO.          |                            |        |              |       |   |          | CC                  | 010A      |          |    |  |  |
| S/N          |                            |        |              |       |   |          | TEMP CODE           | T3C       |          |    |  |  |
| SPEC.        | 09-0000-1467               |        |              |       |   |          | INV.TYPE            | PWM       |          |    |  |  |
| CAT.NO.      | VDRX25244T                 |        |              |       |   |          | C HP FR             | 60        | C HP TO  | 90 |  |  |
| HP           | 20//15                     |        |              |       |   |          | CT HZ FROM          | 6         | CT HZ TO | 60 |  |  |
| VOLTS        | 230/460//190/380           |        |              |       |   |          | VT HZ FROM          | 6         | VT HZ TO | 60 |  |  |
| AMPS         | 48/24//44/22               |        |              |       |   |          | MAG CUR             | 20.8/10.4 |          |    |  |  |
| RPM          | 1770//1470                 |        |              |       |   |          | MX RPM              | 2700      |          |    |  |  |
| HZ           | 60//50                     | PH     | 3            | CL    | F | NOM.EFF. | 93                  |           |          |    |  |  |
| SER.F.       | 1.00                       | DES    | A            | SL HZ | 1 | WK2      | 2.62                |           |          |    |  |  |
| FRAME        | 256TC                      | RATING | 40C AMB-CONT |       |   |          |                     |           |          |    |  |  |
|              | 55C AMB @ 1.0 SF, 60C RISE |        |              |       |   |          |                     |           |          |    |  |  |
|              | 1.15SF ON SINEWAVE         |        |              |       |   |          | NEMA MG-1 PT.5,IP55 |           |          |    |  |  |

**AC Induction Motor Performance Data**

Record # 68068

Typical performance - not guaranteed values

| Winding: 09WGT459-R009 |    |              | Type: 0960M  |                                          | Enclosure: XPFC |                       |           |
|------------------------|----|--------------|--------------|------------------------------------------|-----------------|-----------------------|-----------|
| Nameplate Data         |    |              |              | 460 V, 60 Hz:<br>High Voltage Connection |                 |                       |           |
| Rated Output (HP)      |    | 20           |              | Full Load Torque                         |                 | 59.27 LB-FT           |           |
| Volts                  |    | 230/460      |              | Start Configuration                      |                 | direct on line        |           |
| Full Load Amps         |    | 48/24        |              | Breakdown Torque                         |                 | 232 LB-FT             |           |
| R.P.M.                 |    | 1770         |              | Pull-up Torque                           |                 | 126 LB-FT             |           |
| Hz                     | 60 | Phase        | 3            | Locked-rotor Torque                      |                 | 141 LB-FT             |           |
| NEMA Design Code       |    | A            | KVA Code     | J                                        |                 | Starting Current      | 198 A     |
| Service Factor (S.F.)  |    | 1            |              | No-load Current                          |                 | 10.4 A                |           |
| NEMA Nom. Eff.         |    | 93           | Power Factor | 83                                       |                 | Line-line Res. @ 25°C | 0.33814 Ω |
| Rating - Duty          |    | 40C AMB-CONT |              | Temp. Rise @ Rated Load                  |                 | 58°C                  |           |
|                        |    |              |              | Locked-rotor Power Factor                |                 | 26.5                  |           |

**Load Characteristics 460 V, 60 Hz, 20 HP**

| % of Rated Load | 25     | 50     | 75     | 100    | 125    | 150    |
|-----------------|--------|--------|--------|--------|--------|--------|
| Power Factor    | 45     | 67     | 78     | 83     | 86     | 87     |
| Efficiency      | 89.2   | 93     | 93.7   | 93.6   | 93.1   | 92.4   |
| Speed           | 1793.2 | 1786.4 | 1779.1 | 1771.9 | 1763.7 | 1755.3 |
| Line amperes    | 11.8   | 15     | 19.2   | 24     | 29.3   | 34.9   |

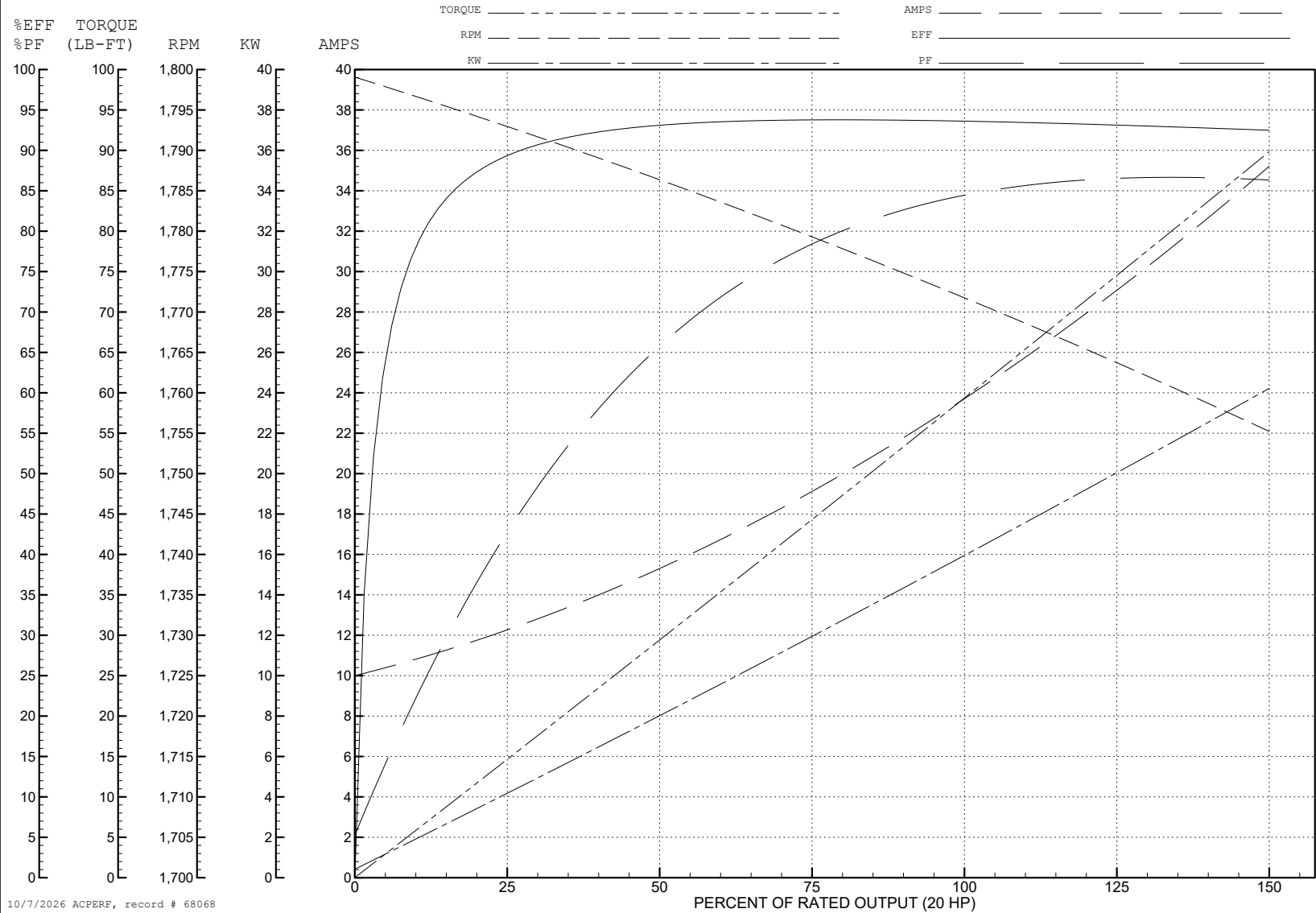
ABB Motors and Mechanical Inc.

WINDING # 09WGT459

Typical performance - not guaranteed values.

20 HP 3 PH 60 HZ 1770 RPM 460 V 0960M

TORQUES (LB-FT): PO=232 PU=126 LR=141 LRA=198



**AC Induction Motor Performance Data**

Record # 75710

Typical performance - not guaranteed values

| Winding: 09WGT459-R033 |  |                  |  | Type: 0960M                              |  | Enclosure: XPFC |  |
|------------------------|--|------------------|--|------------------------------------------|--|-----------------|--|
| Nameplate Data         |  |                  |  | 380 V, 50 Hz:<br>High Voltage Connection |  |                 |  |
| Rated Output (HP)      |  | 20//15           |  | Full Load Torque                         |  | 53.39 LB-FT     |  |
| Volts                  |  | 230/460//190/380 |  | Start Configuration                      |  | direct on line  |  |
| Full Load Amps         |  | 48/24//44/22     |  | Breakdown Torque                         |  | 224 LB-FT       |  |
| R.P.M.                 |  | 1770//1470       |  | Pull-up Torque                           |  | 130 LB-FT       |  |
| Hz                     |  | 60//50           |  | Phase                                    |  | 3               |  |
| NEMA Design Code       |  | A                |  | KVA Code                                 |  | J               |  |
| Service Factor (S.F.)  |  | 1                |  | No-load Current                          |  | 10.15 A         |  |
| NEMA Nom. Eff.         |  | 93               |  | Power Factor                             |  | 83              |  |
| Rating - Duty          |  | 40C AMB-CONT     |  | Temp. Rise @ Rated Load                  |  | 50°C            |  |
|                        |  |                  |  | Locked-rotor Power Factor                |  | 29.8            |  |
|                        |  |                  |  | Rotor inertia                            |  | 2.65 lb-ft²     |  |

**Load Characteristics 380 V, 50 Hz, 15 HP**

| % of Rated Load | 25    | 50   | 75    | 100   | 125   | 150   |
|-----------------|-------|------|-------|-------|-------|-------|
| Power Factor    | 43    | 65   | 77    | 83    | 85    | 87    |
| Efficiency      | 89.1  | 92.8 | 93.5  | 93.4  | 92.8  | 92.1  |
| Speed           | 1494  | 1488 | 1481  | 1475  | 1467  | 1460  |
| Line amperes    | 11.28 | 14   | 17.72 | 21.99 | 26.74 | 31.76 |

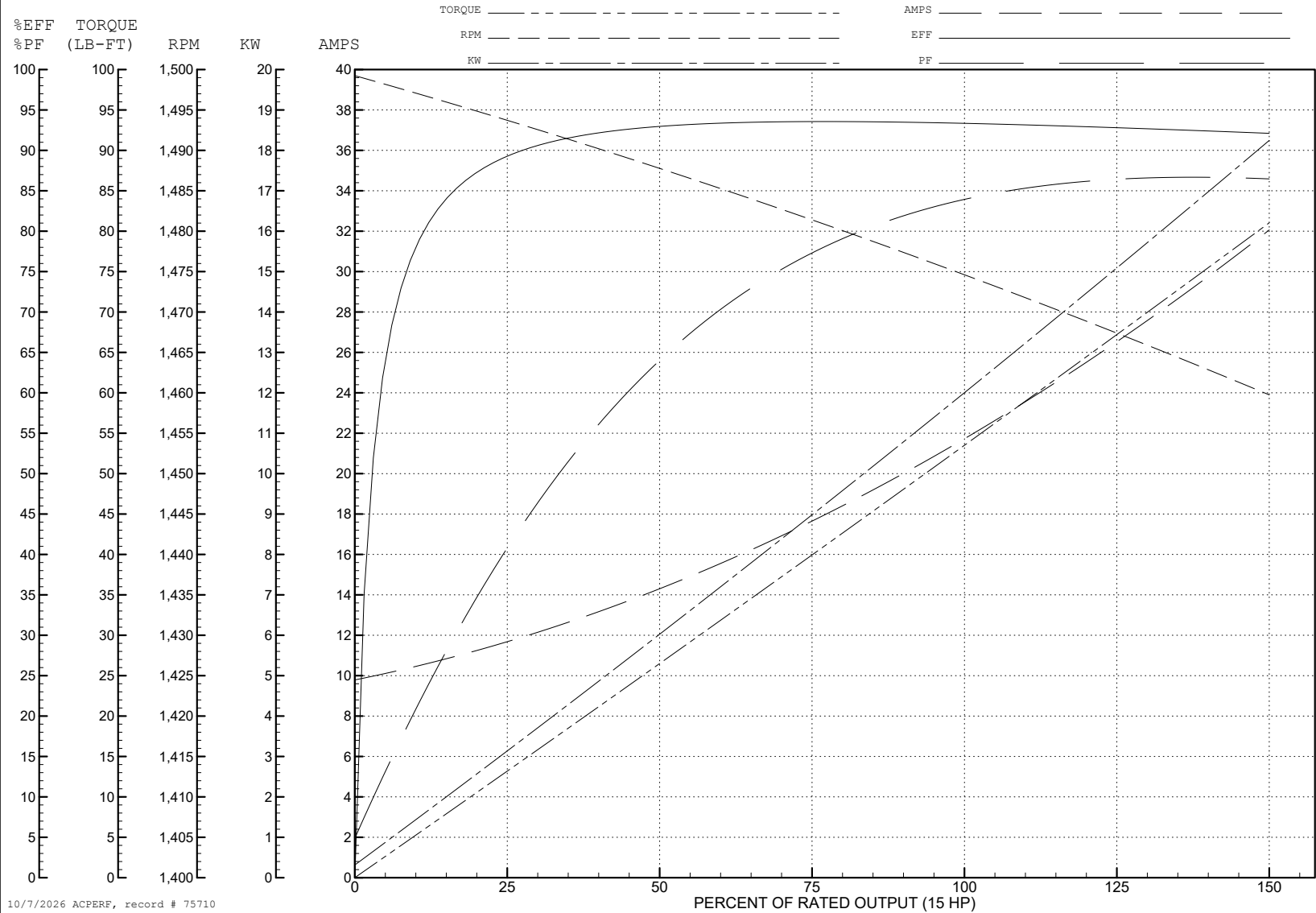
ABB Motors and Mechanical Inc.

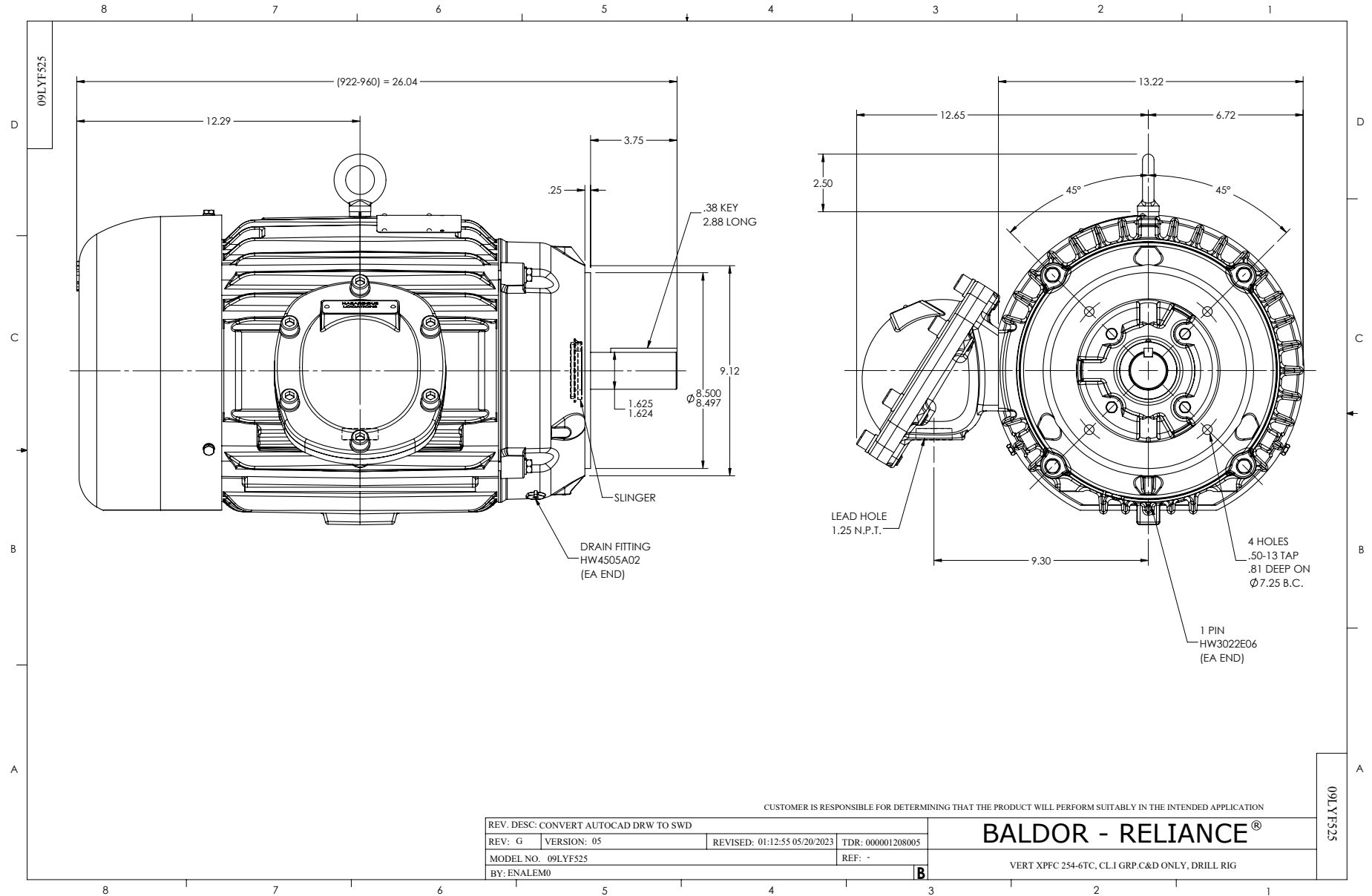
WINDING # 09WGT459

Typical performance - not guaranteed values.

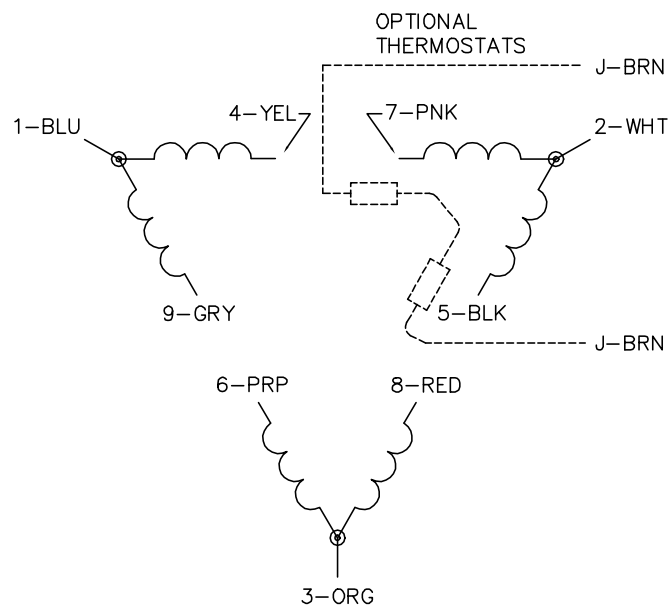
15 HP 3 PH 50 HZ 1475 RPM 380 V 0960M

TORQUES (LB-FT): PO=224 PU=130 LR=146 LRA=193

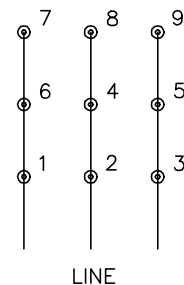




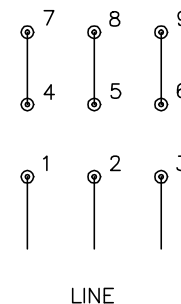
CD0180



LOW VOLTAGE  
(2D)



HIGH VOLTAGE  
(1D)



**NOTES:**

1. INTERCHANGE ANY TWO LINE LEADS TO REVERSE ROTATION.
2. OPTIONAL THERMOSTATS ARE PROVIDED WHEN SPECIFIED.
3. ACTUAL NUMBER OF INTERNAL PARALLEL CIRCUITS MAY BE A MULTIPLE OF THOSE SHOWN ABOVE.
4. LEAD COLORS ARE OPTIONAL. LEADS MUST ALWAYS BE NUMBERED AS SHOWN.

REV. DESC: ADD CLASS CONN00000007

REV. LTR: D

VERSION: 01

TDR: 000001099922

FILE: \AAA\00005\148

REVISED: 10: 25: 29 02/19/2019

BY: ENBRIRO

MTL: —



**BALDOR - RELIANCE®**

3PH, DV, 9 LEADS, DELTA CONNECTION

SH 1 of 1

CD0180