

# ABB BALDOR RELIANCE III

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## Customer information packet

### CDRX25224T

20HP, 3530//2930RPM, 3PH, 60/50HZ, 256TC, XPF

Class - CLI GP C,D

Division - Division I

**Specifications**

|                                       |                                                                                                            |
|---------------------------------------|------------------------------------------------------------------------------------------------------------|
| <b>Enclosure</b>                      | XPFC                                                                                                       |
| <b>Frame</b>                          | 256TC                                                                                                      |
| <b>Frame Material</b>                 | Iron                                                                                                       |
| <b>Frequency</b>                      | 50.00 Hz<br>60.00 Hz                                                                                       |
| <b>Haz Area Class and Group</b>       | CLI GP C,D                                                                                                 |
| <b>Haz Area Division</b>              | Division I                                                                                                 |
| <b>Motor Letter Type</b>              | Three Phase                                                                                                |
| <b>Output @ Frequency</b>             | 15.000 HP @ 50 HZ<br>20.000 HP @ 60 HZ                                                                     |
| <b>Phase</b>                          | 3                                                                                                          |
| <b>Synchronous Speed @ Frequency</b>  | 3600 RPM @ 60 HZ                                                                                           |
| <b>Voltage @ Frequency</b>            | 380.0 V @ 50 HZ<br>230.0 V @ 60 HZ<br>190.0 V @ 50 HZ<br>460.0 V @ 60 HZ                                   |
| <b>Agency Approvals</b>               | CSA EEV<br>UL                                                                                              |
| <b>Ambient Temperature</b>            | 40 °C                                                                                                      |
| <b>Auxiliary Box</b>                  | NO AUXILLARY BOX                                                                                           |
| <b>Auxiliary Box Lead Termination</b> | None                                                                                                       |
| <b>Base Indicator</b>                 | Rigid                                                                                                      |
| <b>Bearing Grease Type</b>            | Polyrex EM (-20F +300F)                                                                                    |
| <b>Blower</b>                         | None                                                                                                       |
| <b>Constant Torque Speed Range</b>    | 6                                                                                                          |
| <b>Current @ Voltage</b>              | 48.000 A @ 208.0 V<br>44.000 A @ 230.0 V<br>40.000 A @ 190.0 V<br>22.000 A @ 460.0 V<br>20.000 A @ 380.0 V |
| <b>Design Code</b>                    | A                                                                                                          |
| <b>Drip Cover</b>                     | No Drip Cover                                                                                              |

**Part Detail**

|                     |            |
|---------------------|------------|
| <b>Revision</b>     | F          |
| <b>Type</b>         | AC         |
| <b>Mech. spec.</b>  |            |
| <b>Base</b>         |            |
| <b>Status</b>       | PRD/A      |
| <b>Elec. spec.</b>  | 09WGW651   |
| <b>Layout</b>       | 09LYF368   |
| <b>Eff. date</b>    | 02-14-2024 |
| <b>CD Diagram</b>   | CD0180     |
| <b>Poles</b>        | 02         |
| <b>Leads</b>        | 9#10       |
| <b>Proprietary</b>  | False      |
| <b>Created date</b> | 06-04-2019 |

|                                      |                            |
|--------------------------------------|----------------------------|
| <b>Duty Rating</b>                   | CONT                       |
| <b>Efficiency @ 100% Load</b>        | 91.0 %                     |
| <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>   | 20.0 a                     |
| <b>Insulation Class</b>              | F                          |
| <b>Inverter Code</b>                 | Inverter Duty              |
| <b>IP Rating</b>                     | NONE                       |
| <b>KVA Code</b>                      | H                          |
| <b>Lifting Lugs</b>                  | Standard Lifting Lugs      |
| <b>Locked Bearing Indicator</b>      | Locked Bearing             |
| <b>Max Speed</b>                     | 5400 rpm                   |
| <b>Motor Lead Termination</b>        | Flying Leads               |
| <b>Motor Standards</b>               | NEMA                       |
| <b>Motor Type</b>                    | 0950M                      |
| <b>Mounting Arrangement</b>          | F1                         |
| <b>Number of Poles</b>               | 2                          |
| <b>Overall Length</b>                | 26.00 IN                   |
| <b>Power Factor</b>                  | 91                         |
| <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>                         | 3530 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.        | 09-0000-1443               |        |   |              |         |          | INV.TYPE            | PWM  |          |    |  |  |
| CAT.NO.      | CDRX25224T                 |        |   |              |         |          | 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         | 44/22//40/20               |        |   |              | MAG CUR |          | 5.8                 |      |          |    |  |  |
| RPM          | 3530//2930                 |        |   |              | MX RPM  |          | 5400                |      |          |    |  |  |
| HZ           | 60//50                     | PH     | 3 | CL           | F       | NOM.EFF. |                     | 91   |          |    |  |  |
| SER.F.       | 1.00                       | DES    | A | SL HZ        | 1.2     | WK2      | 1.28                |      |          |    |  |  |
| 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 # 54032

Typical performance - not guaranteed values

| Winding: 09WGX651-R011 |    |              |              | Type: 0950M                              |  | Enclosure: XPFC |  |
|------------------------|----|--------------|--------------|------------------------------------------|--|-----------------|--|
| Nameplate Data         |    |              |              | 460 V, 60 Hz:<br>High Voltage Connection |  |                 |  |
| Rated Output (HP)      |    | 20           |              | Full Load Torque                         |  | 30 LB-FT        |  |
| Volts                  |    | 230/460      |              | Start Configuration                      |  | direct on line  |  |
| Full Load Amps         |    | 44/22        |              | Breakdown Torque                         |  | 167 LB-FT       |  |
| R.P.M.                 |    | 3530         |              | Pull-up Torque                           |  | 33.7 LB-FT      |  |
| Hz                     | 60 | Phase        | 3            | Locked-rotor Torque                      |  | 51 LB-FT        |  |
| NEMA Design Code       |    | A            | KVA Code     | Starting Current                         |  | 160 A           |  |
| Service Factor (S.F.)  |    | 1            |              | No-load Current                          |  | 5.75 A          |  |
| NEMA Nom. Eff.         |    | 91           | Power Factor | Line-line Res. @ 25°C                    |  | 0.43337 Ω       |  |
| Rating - Duty          |    | 40C AMB-CONT |              | Temp. Rise @ Rated Load                  |  | 58°C            |  |

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

| % of Rated Load | 25     | 50     | 75     | 100    | 125    | 150    |
|-----------------|--------|--------|--------|--------|--------|--------|
| Power Factor    | 65     | 83     | 89     | 91     | 91     | 91     |
| Efficiency      | 89.4   | 92.7   | 92.9   | 92.4   | 91.4   | 90.1   |
| Speed           | 3580.7 | 3566.7 | 3547.3 | 3526.6 | 3504.5 | 3479.4 |
| Line amperes    | 8.04   | 12.2   | 17.1   | 22.4   | 28.2   | 34.2   |

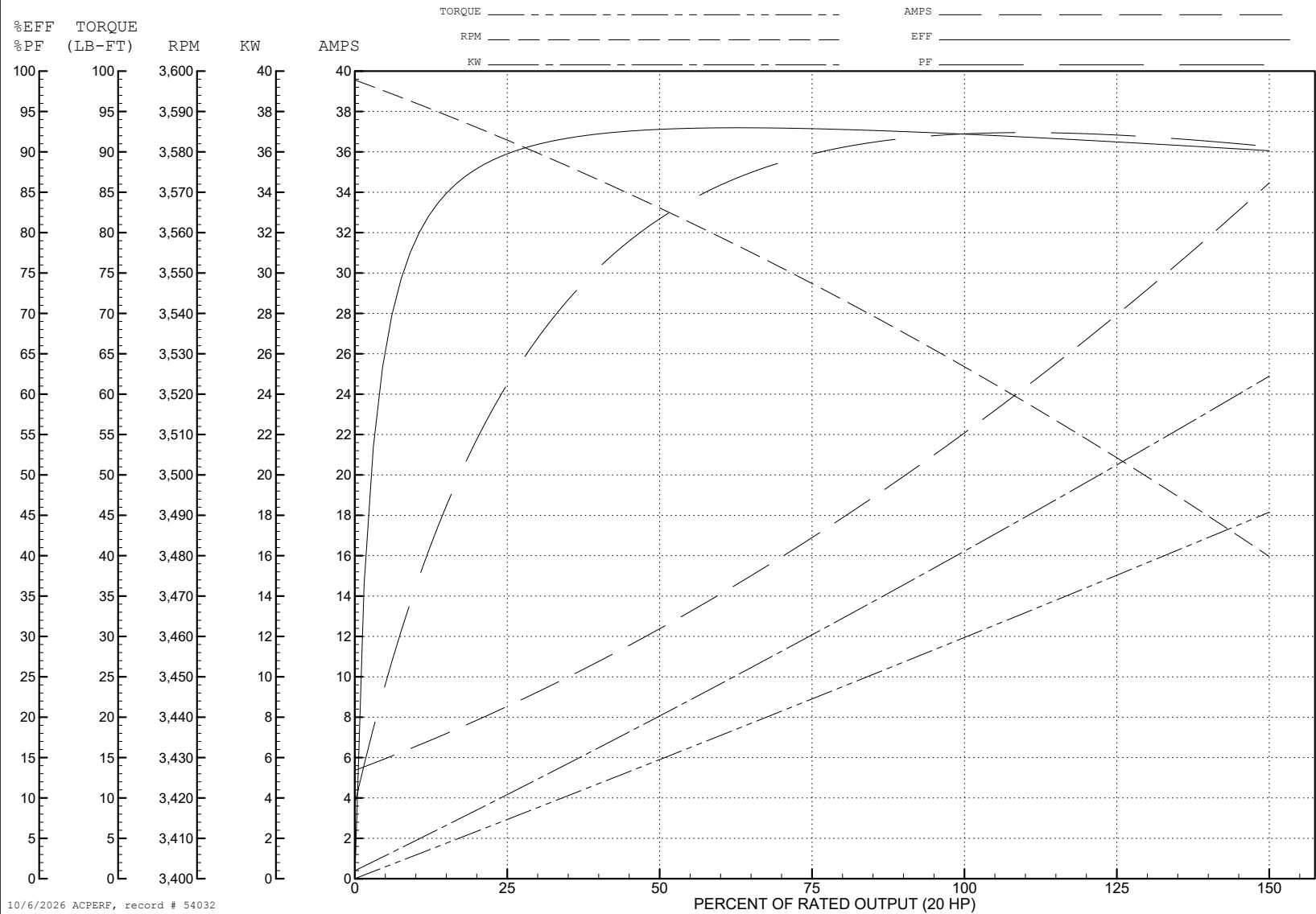
ABB Motors and Mechanical Inc.

WINDING # 09WGZ651

Typical performance - not guaranteed values.

20 HP 3 PH 60 HZ 3530 RPM 460 V 0950M

TORQUES (LB-FT): PO=167 PU=33.7 LR=51 LRA=160



**AC Induction Motor Performance Data**

Record # 75709

Typical performance - not guaranteed values

| Winding: 09WGZ651-R010 |        |                  |              | Type: 0950M                              |                       | Enclosure: XPFC |        |
|------------------------|--------|------------------|--------------|------------------------------------------|-----------------------|-----------------|--------|
| Nameplate Data         |        |                  |              | 380 V, 50 Hz:<br>High Voltage Connection |                       |                 |        |
| Rated Output (HP)      |        | 20//15           |              | Full Load Torque                         |                       | 27.04 LB-FT     |        |
| Volts                  |        | 230/460//190/380 |              | Start Configuration                      |                       | direct on line  |        |
| Full Load Amps         |        | 44/22//40/20     |              | Breakdown Torque                         |                       | 161 LB-FT       |        |
| R.P.M.                 |        | 3530//2930       |              | Pull-up Torque                           |                       | 35.64 LB-FT     |        |
| Hz                     | 60//50 | Phase            | 3            | Locked-rotor Torque                      |                       | 53.94 LB-FT     |        |
| NEMA Design Code       |        | A                | KVA Code     | H                                        | Starting Current      |                 | 156 A  |
| Service Factor (S.F.)  |        | 1                |              | No-load Current                          |                       | 5.68 A          |        |
| NEMA Nom. Eff.         |        | 91               | Power Factor | 91                                       | Line-line Res. @ 25°C |                 | 0.41 Ω |
| Rating - Duty          |        | 40C AMB-CONT     |              | Temp. Rise @ Rated Load                  |                       | 51°C            |        |
| S.F. Amps              |        |                  |              | Temp. Rise @ S.F. Load                   |                       | 64°C            |        |
|                        |        |                  |              | Locked-rotor Power Factor                |                       | 31.3            |        |
|                        |        |                  |              | Rotor inertia                            |                       | 1.28 LB-FT2     |        |

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

| % of Rated Load | 25   | 50    | 75   | 100   | 125   | 150   |
|-----------------|------|-------|------|-------|-------|-------|
| Power Factor    | 62   | 82    | 88   | 91    | 91    | 92    |
| Efficiency      | 89.5 | 92.9  | 92.7 | 91.9  | 90.9  | 89.7  |
| Speed           | 2983 | 2970  | 2952 | 2934  | 2914  | 2892  |
| Line amperes    | 7.59 | 11.31 | 15.7 | 20.45 | 25.66 | 31.13 |

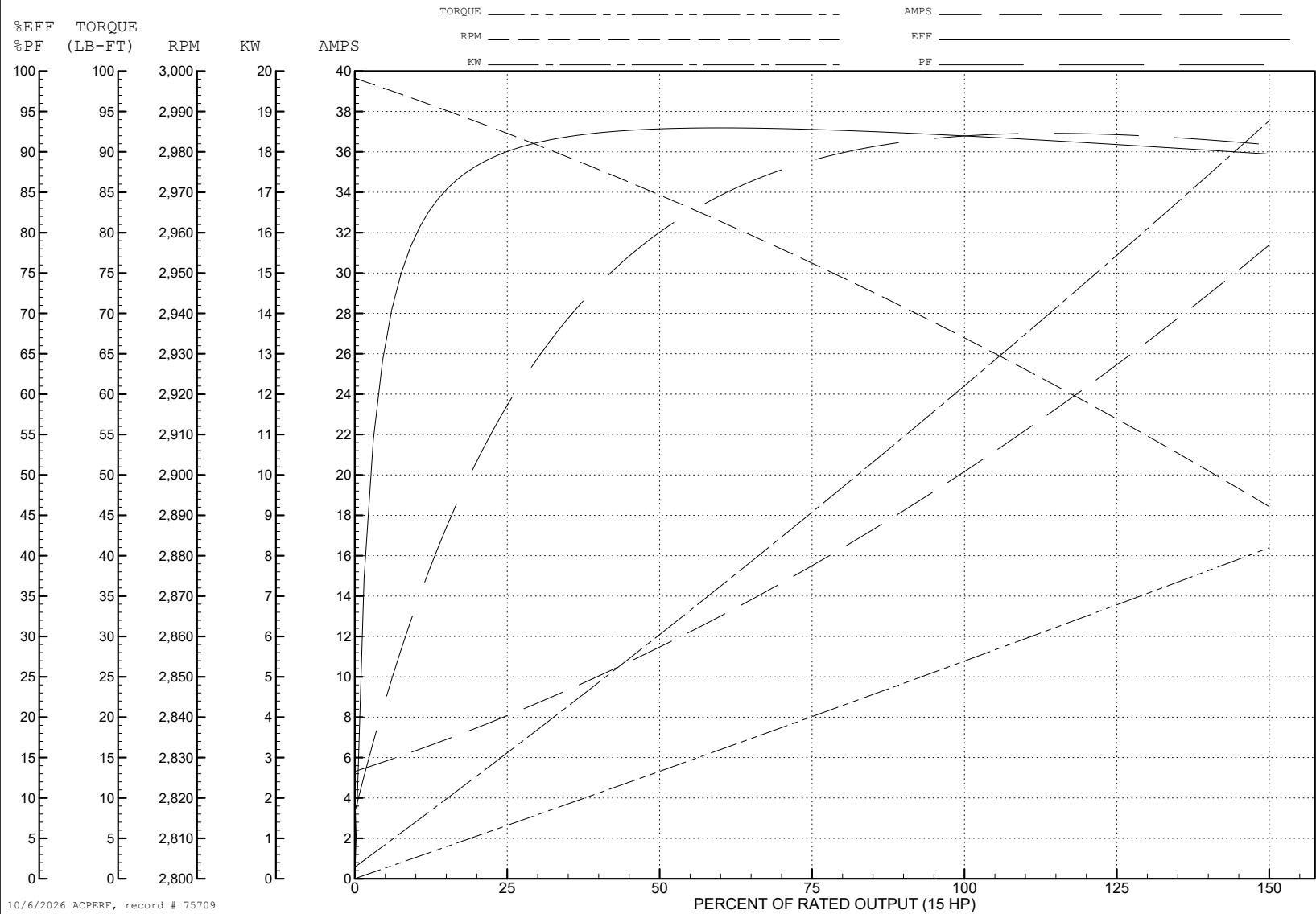
ABB Motors and Mechanical Inc.

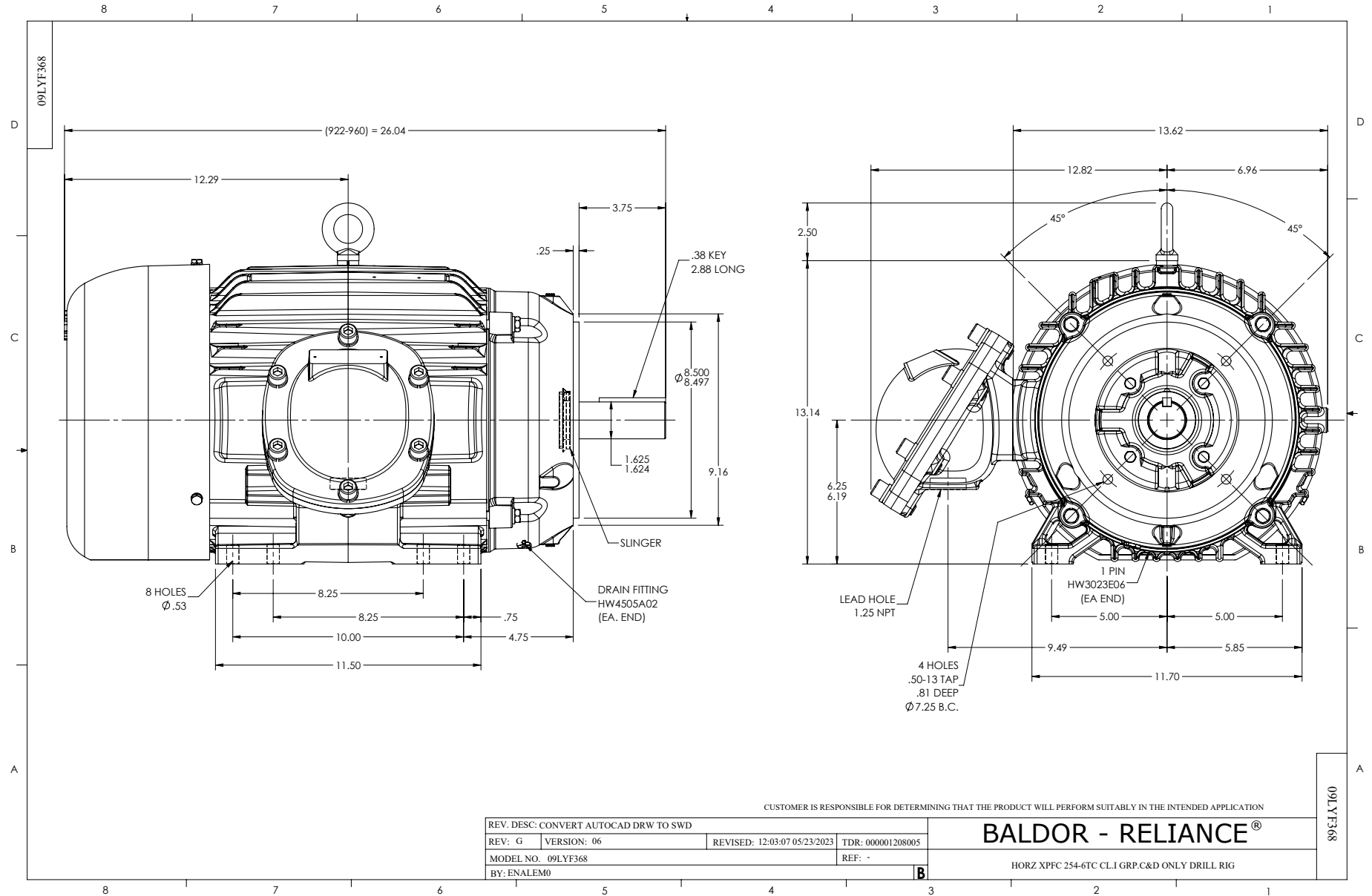
WINDING # 09WGZ651

Typical performance - not guaranteed values.

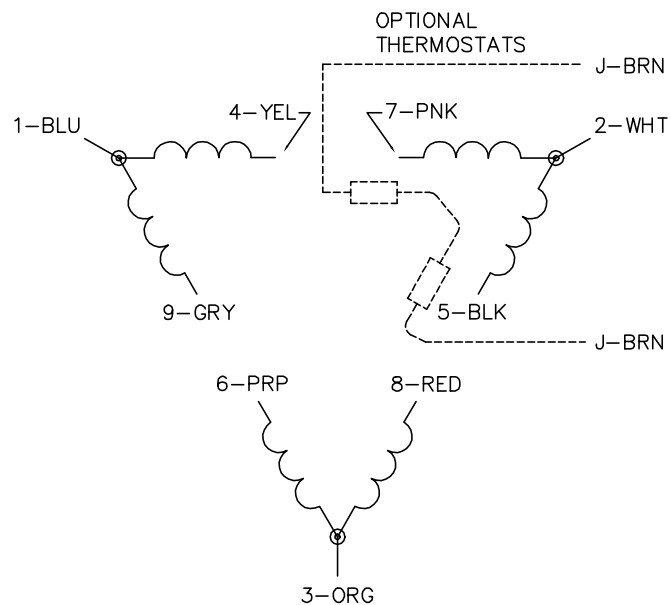
15 HP 3 PH 50 HZ 2934 RPM 380 V 0950M

TORQUES (LB-FT): PO=161 PU=35.64 LR=53.94 LRA=156

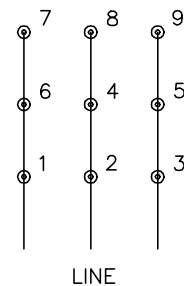




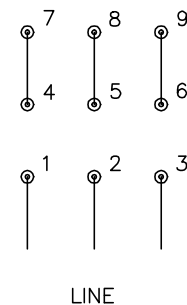
CD0180



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.

CD0180

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