

# ABB BALDOR RELIANCE III

---

## Customer information packet

### IDCRPM281004

100HP, 1800, 460V, FL2890, TEFC, F3

**Specifications**

|                               |                         |
|-------------------------------|-------------------------|
| Enclosure                     | TEFC                    |
| Frame                         | FL2890Z                 |
| Frame Material                | Exposed Laminations     |
| Frequency                     | 60.00 Hz                |
| Output @ Frequency            | 100.000 HP @ 60 HZ      |
| Phase                         | 3                       |
| Synchronous Speed @ Frequency | 1800 RPM @ 60 HZ        |
| Voltage @ Frequency           | 460.0 V @ 60 HZ         |
| Agency Approvals              | CCSA US<br>NEMA PREMIUM |
| Auxiliary Box                 | NO AUXILLARY BOX        |
| Base Indicator                | Rigid                   |
| Bearing Grease Type           | Polyrex EM (-20F +300F) |
| Constant Torque Speed Range   | 1-60                    |
| Current @ Voltage             | 98.000 A @ 460.0 V      |
| Duty Rating                   | CONT                    |
| Feedback Device               | NO FEEDBACK             |
| Frame Prefix                  | FL                      |
| Heater Indicator              | No Heater               |
| High Voltage Full Load Amps   | 98.0 a                  |
| Insulation Class              | H                       |
| KVA Code                      | F                       |
| Motor Standards               | NEMA                    |
| Mounting Arrangement          | F3                      |
| Overall Length                | 36.59 IN                |
| Product Family                | General Industrial      |
| Pulley End Bearing Type       | Ball                    |
| Pulley Face Code              | Standard                |
| Service Factor                | 1.00                    |
| Shaft Diameter                | 2.624 IN                |
| Shaft Ground Indicator        | Shaft Grounding         |
| Shaft Rotation                | Reversible              |

**Part Detail**

|              |            |
|--------------|------------|
| Revision     | B          |
| Type         | AC         |
| Mech. spec.  |            |
| Base         |            |
| Status       | PRD/A      |
| Elec. spec.  | LS7031A    |
| Layout       | 617245-073 |
| Eff. date    | 03-24-2022 |
| CD Diagram   | 422927-001 |
| Poles        | 04         |
| Leads        |            |
| Proprietary  | False      |
| Created date | 11-01-2021 |

|                          |                            |
|--------------------------|----------------------------|
| Speed                    | 1800 rpm                   |
| Starting Method          | Full Voltage               |
| Thermal Device - Bearing | None                       |
| Thermal Device - Winding | Normally Closed Thermostat |

**Nameplate**
**000613007QF**

|                           |              |       |                       |       |               |    |              |      |        |   |              |   |   |  |  |  |
|---------------------------|--------------|-------|-----------------------|-------|---------------|----|--------------|------|--------|---|--------------|---|---|--|--|--|
|                           | DUTY         | HP    | RPM                   | AMPS  | VOLTS         | HZ |              |      |        |   |              |   |   |  |  |  |
|                           | CONT         | 100   | 1800                  | 98    | 460           | 60 |              |      |        |   |              |   |   |  |  |  |
|                           |              |       |                       |       |               |    |              |      |        |   |              |   |   |  |  |  |
|                           |              |       |                       |       |               |    |              |      |        |   |              |   |   |  |  |  |
| CAT.NO.                   | IDCRPM281004 |       | SPEC. NO.             |       | F28-A000-0372 |    |              |      |        |   |              |   |   |  |  |  |
| SER.NO                    |              |       | FRAME SIZE            |       | FL2890Z       |    | TYPE PSM     |      |        |   |              |   |   |  |  |  |
| AMB.                      | 40           | S.F.  | 1.00                  | ENCL. | TEFC          |    | PH           | 3    | DESIGN | B | CODE         | F |   |  |  |  |
| NEMA NOM. EFF             | 97.3         |       | GUARANTEED EFFICIENCY |       | 96.7          |    | POWER FACTOR |      | 99.1   |   | INSUL. CLASS |   | H |  |  |  |
| D.E. BRG.                 | 75BC02J30X   |       | O.D.E. BRG.           |       | 55BC02J30X    |    |              |      |        |   |              |   |   |  |  |  |
| VPWM INVERTER DUTY @1.0SF | CHP HZ       | 60-90 |                       | CT HZ | 1-60          |    | VT HZ        | 0-60 |        |   |              |   |   |  |  |  |
|                           | IP54 X/T     |       |                       |       |               |    |              |      |        |   |              |   |   |  |  |  |

|                           |  |          |
|---------------------------|--|----------|
| <hr/>                     |  |          |
| 000692000VY               |  |          |
| <hr/>                     |  |          |
| MEAS OPEN CIRCUIT VOLTAGE |  |          |
| IS                        |  | VOLTS AT |
|                           |  | RPM.     |
| <hr/>                     |  |          |

**Parts List**

| Part number  | Description                         | Quantity |
|--------------|-------------------------------------|----------|
| WS393136     | WS F28-A000-0372                    | 1.000 ea |
| RA389666     | RA F28-A000-0372                    | 1.000 ea |
| 418018122A   | LABEL                               | 2.000 ea |
| 033775004EA  | DRSCR #6-1/4 304 S.S.               | 4.000 ea |
| 000613007QF  | NP,RPM AC - XE WITH CERTIFIED LOGO  | 1.000 ea |
| 000692000XM  | LABEL QR CODE                       | 1.000 ea |
| LB1613       | LABEL, QR CODE, ADHESIVE LABEL      | 1.000 ea |
| 000692000VY  | PERMANENT MAGNET MOTOR NAMEPLATE    | 1.000 ea |
| 422927001    | C/D LABEL                           | 1.000 ea |
| 004824007AB  | PAINT,XT                            | 0.100 ea |
| 807583004AAB | BRKT,ODE,FL280                      | 1.000 ea |
| 807583003AAA | BRKT,DE,FL280                       | 1.000 ea |
| BP5068BJ01   | BRUSH, .187 X .187 X 1.00           | 2.000 ea |
| HA4054       | SHORT T-DRAIN FITTING, .125" N.P.T. | 1.000 ea |
| HA4054       | SHORT T-DRAIN FITTING, .125" N.P.T. | 1.000 ea |
| 004824015A   | GREASE POLYREX EM                   | 0.300 lb |
| 036600014AB  | FLTW MOTOR MTG.                     | 2.000 ea |
| 415045002F   | SLINGER                             | 1.000 ea |
| 415045002P   | SLINGER                             | 1.000 ea |
| 400638001G   | WAVEN (Customer number 43699)       | 1.000 ea |
| 036000016DB  | HHCS                                | 4.000 ea |
| 418150003A   | GREASE FITTING CAP                  | 2.000 ea |
| 035000001A   | ALFTG 1/8" 1610-BL                  | 1.000 ea |
| 035000001BA  | ALFTG 1/8" 1688-B-use 1B (bs)       | 1.000 ea |
| 036100070KA  | METRIC HSHCS                        | 3.000 ea |
| 036100070JA  | HSHCS M8 70MM UNPLATED              | 3.000 ea |
| 036140001D   | EYEBOLT - 360                       | 2.000 ea |
| 034693001AB  | PPLG - G508- use 034692001AB        | 1.000 ea |
| 034693001AB  | PPLG - G508- use 034692001AB        | 1.000 ea |
| 036500011AB  | METRIC NUT M12-1.75 PLT.            | 4.000 ea |
| 036500011AB  | METRIC NUT M12-1.75 PLT.            | 4.000 ea |

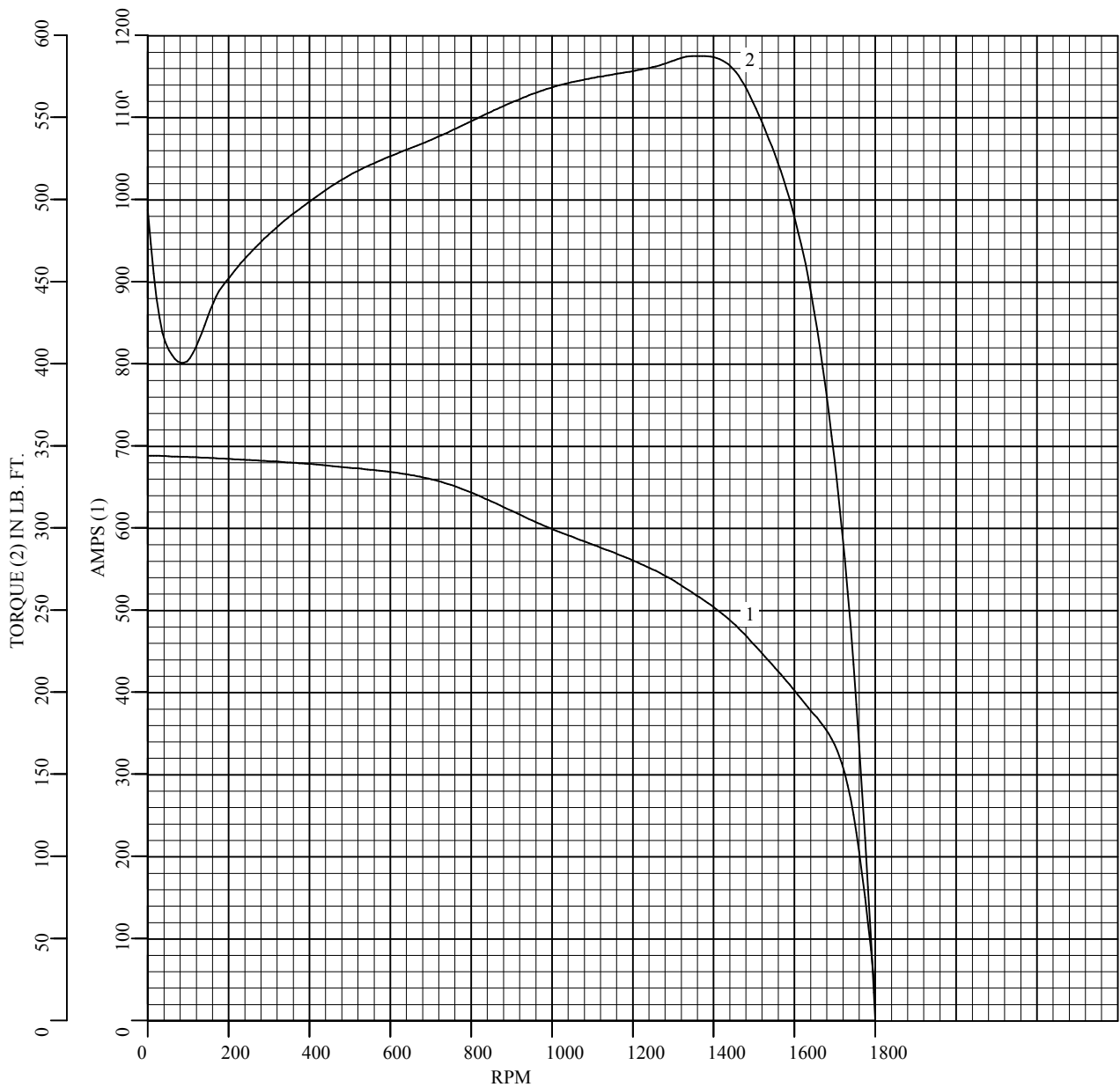
|              |                                          |           |
|--------------|------------------------------------------|-----------|
| 609830005G   | TBOLT VERSION 3                          | 4.000 ea  |
| BP5248       | BP5248                                   | 2.000 ea  |
| 415000103D   | T/LUG #4AWG-1/0AWG W/HOLE FOR .250 BOLT  | 1.000 ea  |
| 415072001B   | CLAMP                                    | 1.000 ea  |
| 706310640B   | BACKPLATE GASKET C/BOX 706310-637        | 1.000 ea  |
| 417733004J   | GASKT                                    | 1.000 ea  |
| 034180014GA  | KEY 1/2X1/2X1-3/4 L                      | 1.000 ea  |
| 078548001RC  | 078548001F FAN, OUTER, C250AT            | 1.000 ea  |
| 708535012A   | FAN COVER FL280                          | 1.000 ea  |
| 708533003A   | PLATE, BTM FAN/BLOWER                    | 2.000 ea  |
| 708535010A   | FAN COVER FL280                          | 1.000 ea  |
| 036000016KB  | HHCSM10-1.5X16MM PLTD-280                | 3.000 ea  |
| 418057256F   | HHCS M6 12MM ZINCPLAT                    | 1.000 ea  |
| 418057373A   | SCREW SHEET METAL                        | 11.000 ea |
| 418018074A   | GROUND LABEL G100 METRIC 160 D.C.        | 1.000 ea  |
| 406673002AE  | 2" CAP PLUG                              | 1.000 ea  |
| 036620009AB  | M8 EXTERNAL LK WASHER                    | 1.000 ea  |
| 034630001AJ  | 1/8" PIPE COUPLING                       | 1.000 ea  |
| 706310642A   | BACK PLATE FOR 706310-637 WITH 5.00" BOL | 1.000 ea  |
| 036600009AB  | METRIC FLWASH M8 PLATED                  | 2.000 ea  |
| 034530016AB  | P/NIP 1/8X2 PLATED - 320                 | 1.000 ea  |
| 706310637A   | C/BOX, MILL, RPMAC, 9X9X4, 375IN^3       | 1.000 ea  |
| 706310641A   | LIPPED CBOX LID FOR 706310-642           | 1.000 ea  |
| 706310640A   | LID GASKET C/BOX 706310-637              | 1.000 ea  |
| 036000012JB  | M8-1.25 X 12MM HXHDC                     | 4.000 ea  |
| 036010012HB  | HHCS T/BOX BRACE                         | 16.000 ea |
| 034180032HA  | KEY 5/8X5/8X4                            | 1.000 ea  |
| 000640000P   | TAG WINDING THERMOST                     | 1.000 ea  |
| 004824007CQR | C2 PAINT SYSTEM MEDIUM GRAY CHARCOAL MET | 0.100 ea  |
| LB1549       | LABEL, BLANK 1.375 X 2.250 IMPRINTABLE   | 1.000 ea  |

| S.O.                                                                                                                                       | FRAME  | HP                                                         | TYPE                                                 | PHASE                                                                         | HERTZ        | RPM         |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------------------------|--------------|-------------|
| --                                                                                                                                         | FL2890 | 100                                                        | PSM                                                  | 3                                                                             | 60           | 1800        |
| VOLTS                                                                                                                                      | AMPS   | DUTY                                                       | AMB <sup>0</sup> C                                   | INSUL                                                                         | S.F.         | NEMA DESIGN |
| 460                                                                                                                                        | 96.9   | CONT                                                       | 40                                                   | H                                                                             | 1.15         | B           |
| CODE LETTER                                                                                                                                | ENCL   | ROTOR INERTIA (lb-ft <sup>2</sup> )                        | STATOR RES. @ 25 <sup>0</sup> C OHMS (BETWEEN LINES) | TYPICAL DATA                                                                  |              |             |
| G                                                                                                                                          | TEFC   | 11.1                                                       | .06784                                               |                                                                               |              |             |
| PERFORMANCE                                                                                                                                |        |                                                            |                                                      |                                                                               |              |             |
| LOAD                                                                                                                                       | HP     | AMPERES                                                    | RPM                                                  | % POWER FACTOR                                                                | % EFFICIENCY |             |
| NO LOAD                                                                                                                                    | 0      | 32.1                                                       | 1800                                                 | 3.50                                                                          | N/A          |             |
| 1/4                                                                                                                                        | 25.0   | 28.3                                                       | 1800                                                 | 86.8                                                                          | 95.3         |             |
| 2/4                                                                                                                                        | 49.9   | 49.0                                                       | 1800                                                 | 98.7                                                                          | 96.8         |             |
| 3/4                                                                                                                                        | 74.9   | 72.6                                                       | 1800                                                 | 99.4                                                                          | 97.2         |             |
| 4/4                                                                                                                                        | 99.8   | 96.9                                                       | 1800                                                 | 99.1                                                                          | 97.3         |             |
| 5/4                                                                                                                                        | 125    | 122                                                        | 1800                                                 | 98.3                                                                          | 97.2         |             |
| SPEED TORQUE                                                                                                                               |        |                                                            |                                                      |                                                                               |              |             |
|                                                                                                                                            | RPM    | TORQUE (% FULL LOAD)                                       | TORQUE (lb-ft)                                       | AMPERES                                                                       |              |             |
| LOCKED ROTOR                                                                                                                               | 0      | 169                                                        | 493.9                                                | 688.0                                                                         |              |             |
| PULL OUT                                                                                                                                   | 1800   | 220                                                        | 642.1                                                | 275.6                                                                         |              |             |
| FULL LOAD                                                                                                                                  | 1800   | 100                                                        | 291.5                                                | 96.9                                                                          |              |             |
| THIS IS A PERMANENT MAGNET MOTOR<br>GENERATED OPEN CIRCUIT LINE-LINE VOLTAGE at 25 <sup>0</sup> C = 22.1 VOLTS PER 100 RPM<br><br>REMARKS: |        |                                                            |                                                      |                                                                               |              |             |
|                                                         |        | DR. BY CAD<br>CK. BY RFM<br>APP. BY RFM<br>DATE 05/25/2016 |                                                      | <b>LSPM MOTOR PERFORMANCE DATA</b><br><b>LS7031A</b><br>ISSUE DATE 05/25/2016 |              |             |



|       |        |       |      |                    |      |                                       |        |
|-------|--------|-------|------|--------------------|------|---------------------------------------|--------|
| S.O.  | --     | HERTZ | 60   | AMB <sup>0</sup> C | 40   | CODE LETTER                           | G      |
| FRAME | FL2890 | RPM   | 1800 | INSUL              | H    | WK <sup>2</sup> (lb-ft <sup>2</sup> ) | 11.1   |
| HP    | 100    | VOLTS | 460  | S.F.               | 1.15 | NEMA DESIGN                           | B      |
| TYPE  | PSM    | AMPS  | 96.9 | ENCL               | TEFC | STATOR RES. @ 25 <sup>0</sup> C       | .06784 |
| PHASE | 3      | DUTY  | CONT |                    |      | OHMS (BETWEEN LINES)                  |        |

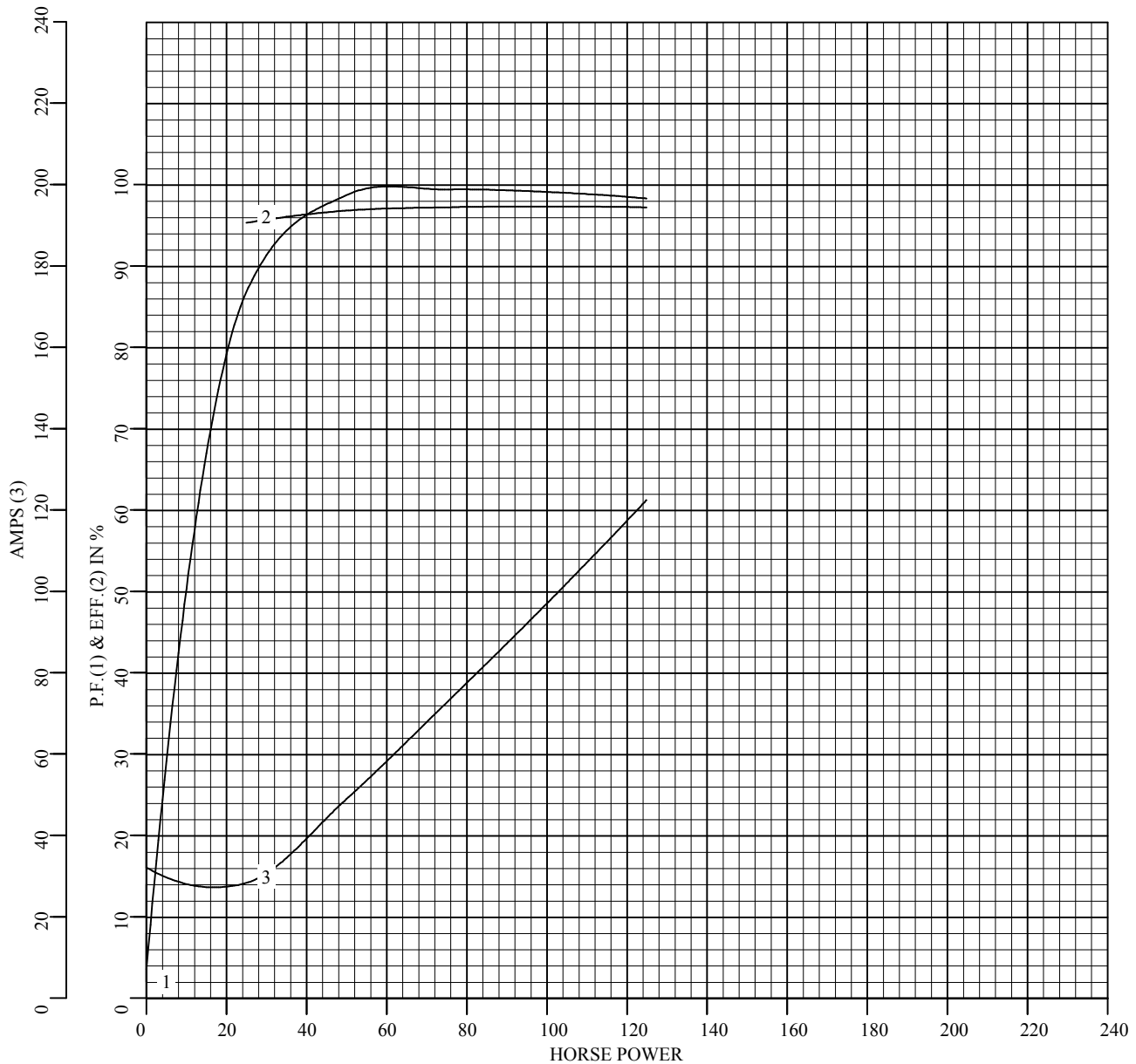
### Amps & Torque vs. RPM During Acceleration



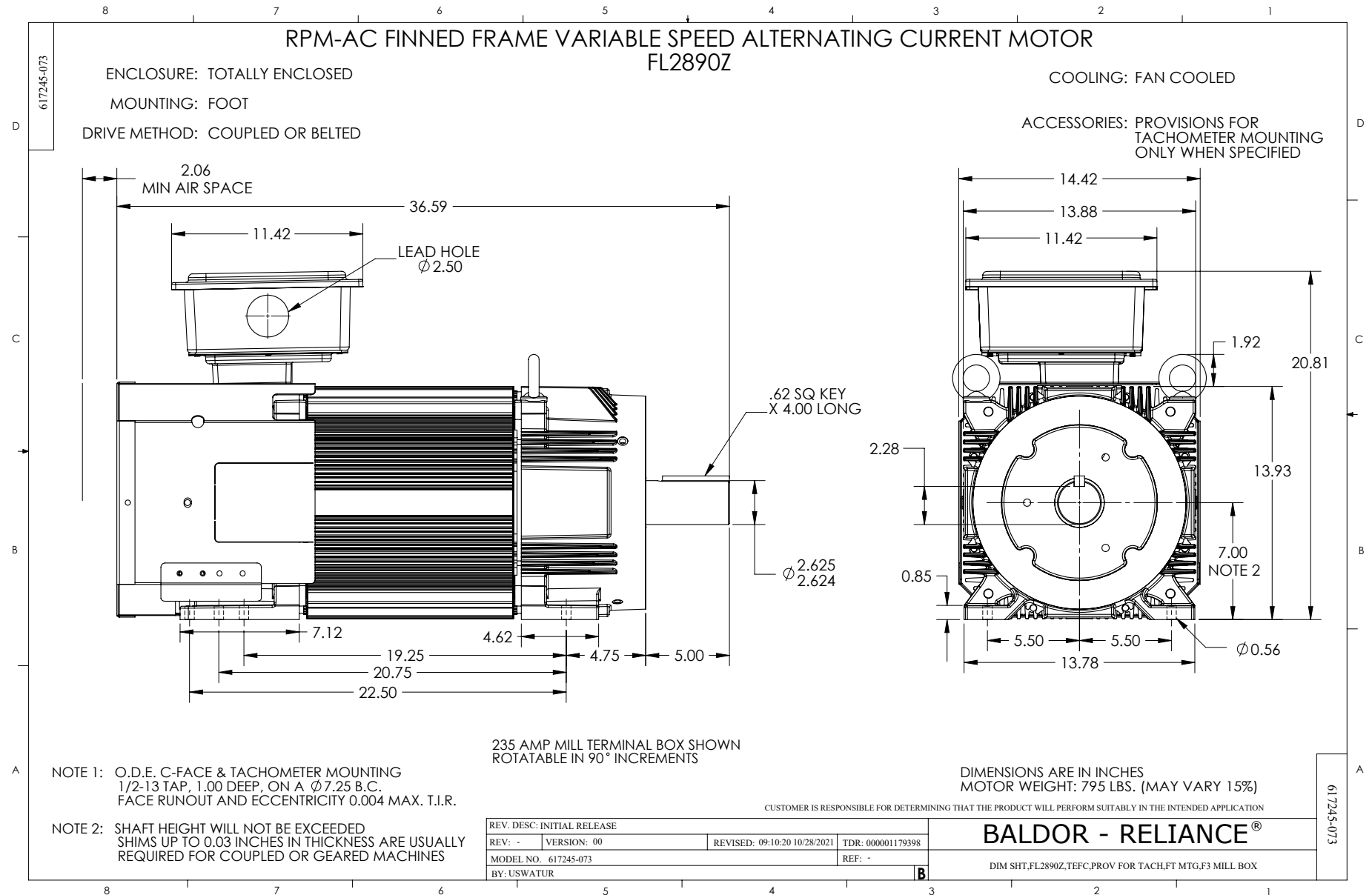
TYPICAL DATA

|       |        |       |      |                    |      |                                       |        |
|-------|--------|-------|------|--------------------|------|---------------------------------------|--------|
| S.O.  | --     | HERTZ | 60   | AMB <sup>0</sup> C | 40   | CODE LETTER                           | G      |
| FRAME | FL2890 | RPM   | 1800 | INSUL              | H    | WK <sup>2</sup> (lb-ft <sup>2</sup> ) | 11.1   |
| HP    | 100    | VOLTS | 460  | S.F.               | 1.15 | NEMA DESIGN                           | B      |
| TYPE  | PSM    | AMPS  | 96.9 | ENCL               | TEFC | STATOR RES. @ 25 <sup>0</sup> C       | .06784 |
| PHASE | 3      | DUTY  | CONT |                    |      | OHMS (BETWEEN LINES)                  |        |

### Performance Data vs. HP At Synchronous Speed

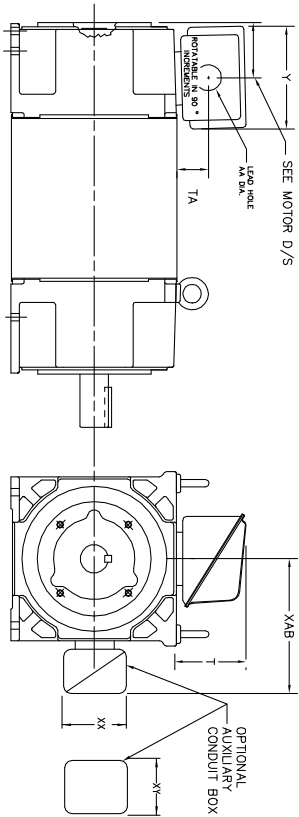


TYPICAL DATA



INDUSTRIAL ALTERNATING CURRENT MOTORS  
RPM AC

STEEL, CAST IRON, MILL AND TERMINAL BOARD CONDUIT BOX DIMENSIONS  
NEMA FRAMES RL210 thru RL280 and IEC FRAMES RDL132 thru RDL180  
NEMA FRAMES FL180 thru FL280 and IEC FRAMES FDL112 thru FDL180



| FRAME         | TYPE      | TERMINAL STRIP | AMPS | C/BOX      | Y    | TA   | T    | AA        |
|---------------|-----------|----------------|------|------------|------|------|------|-----------|
| FL180         | STEEL     | N              | 40   | 706320003A | 5.00 | 1.62 | 3.00 | 1.12      |
| FL180         | STEEL     | Y/N            | 75   | 706320003A | 6.12 | 2.36 | 4.38 | 1.75/2.00 |
| FL180         | STEEL     | N              | 208  | 706320007A | 6.62 | 2.00 | 7.00 | 2.50/3.00 |
| FL180         | CAST IRON | Y/N            | 100  | 706320004B | 6.75 | 2.50 | 4.38 | 1.0/1.75  |
| FL180 & FDL11 | MILL      | Y              | 100  | 706310056A | 7.75 | 2.30 | 4.40 | PG29/PG16 |

|               |           |     |     |            |       |      |      |           |
|---------------|-----------|-----|-----|------------|-------|------|------|-----------|
| FL210 & RL210 | STEEL     | N   | 61  | 075452000B | 6.34  | 2.00 | 4.12 | 1.75      |
| FL210 & RL210 | STEEL     | N   | 121 | 075452001A | 7.69  | 2.38 | 5.25 | 1.94      |
| FL210 & RL210 | STEEL     | N   | 306 | 706320016A | 9.00  | 4.12 | 8.44 | 4.59      |
| FL210 & RL210 | CAST IRON | N   | 110 | 075460062B | 7.25  | 2.50 | 5.25 | 1.5 TAP   |
| FL210 & RL210 | MILL      | Y   | 100 | 706310229A | 7.75  | 2.30 | 4.40 | PG29/PG16 |
| FL210 & RL210 | MILL      | Y   | 160 | 706310056A | 9.00  | 3.06 | 5.40 | PG36/PG16 |
| FL210 & RL210 | MILL      | Y/N | 235 | 706310056B | 11.42 | 4.00 | 6.72 | 2.50      |

|               |           |     |     |            |       |      |       |           |
|---------------|-----------|-----|-----|------------|-------|------|-------|-----------|
| FL250 & RL250 | STEEL     | N   | 61  | 075452000B | 6.34  | 2.00 | 4.12  | 1.75      |
| FL250 & RL250 | STEEL     | N   | 121 | 075452001A | 7.69  | 2.38 | 5.25  | 1.94      |
| FL250 & RL250 | STEEL     | N   | 306 | 706320016A | 9.00  | 4.12 | 8.44  | 4.59      |
| FL250 & RL250 | CAST IRON | N   | 110 | 075460062B | 7.25  | 2.50 | 5.25  | 1.5 TAP   |
| FL250 & RL250 | CAST IRON | N   | 210 | 706320013A | 10.50 | 4.88 | 9.00  | 4.0 TAP   |
| FL250 & RL250 | MILL      | Y   | 100 | 706310229A | 7.75  | 2.30 | 4.40  | PG29/PG16 |
| FL250 & RL250 | MILL      | Y   | 160 | 706310056B | 9.00  | 3.06 | 5.40  | PG36/PG16 |
| FL250 & RL250 | MILL      | Y/N | 235 | 706310057A | 11.42 | 4.00 | 6.72  | 2.50      |
| FL250 & RL250 | MILL      | Y   | 400 | 706310063B | 14.39 | 7.43 | 12.15 | BLANK     |

|               |           |     |     |            |       |      |       |           |
|---------------|-----------|-----|-----|------------|-------|------|-------|-----------|
| FL280 & RL280 | STEEL     | N   | 160 | 706320029A | 7.25  | 3.50 | 7.06  | 2.50      |
| FL280 & RL280 | STEEL     | N   | 306 | 706320016A | 9.00  | 4.12 | 8.44  | 4.59      |
| FL280 & RL280 | STEEL     | N   | 500 | 702658001C | 14.62 | 7.56 | 12.70 | 5.00      |
| FL280 & RL280 | CAST IRON | N   | 140 | 706320012B | 9.25  | 4.81 | 8.56  | 3.0 TAP   |
| FL280 & RL280 | CAST IRON | N   | 210 | 706320013A | 10.50 | 4.88 | 9.00  | 4.0 TAP   |
| FL280 & RL280 | CAST IRON | N   | 510 | 706320014D | 15.00 | 7.56 | 12.81 | 5.0 TAP   |
| FL280 & RL280 | MILL      | Y   | 100 | 706310056A | 7.75  | 2.30 | 4.40  | PG29/PG16 |
| FL280 & RL280 | MILL      | Y   | 160 | 706310056B | 9.00  | 3.06 | 5.40  | PG36/PG16 |
| FL280 & RL280 | MILL      | Y/N | 235 | 706310057A | 11.42 | 4.00 | 6.72  | 2.50      |
| FL280 & RL280 | MILL      | Y   | 400 | 706310063B | 14.39 | 7.43 | 12.15 | BLANK     |

| FRAME SIZE        | YAB  | XA   | XY   | PART NUMBER | FRAME SIZE        | YAB   | XA   | XY   | PART NUMBER |
|-------------------|------|------|------|-------------|-------------------|-------|------|------|-------------|
| FL210/RL210/FL112 | 7.38 | 4.25 | 4.25 | 602007-26-A | FL210/RL210/FL112 | 10.88 | 8.00 | 8.00 | 706310-3-B  |
| FL250/RL250/FL160 | 8.44 | 4.25 | 4.25 | 602007-26-A | FL250/RL250/FL160 | 11.88 | 8.00 | 8.00 | 706310-3-B  |
| FL280/RL280/FL180 | 9.12 | 4.25 | 4.25 | 602007-26-A | FL280/RL280/FL180 | 12.62 | 8.00 | 8.00 | 706310-3-B  |

(1) 1"AW CONDUIT.  
(2) 1"AW PIPE TAP.  
(3) CUSTOMER TO PROVIDE HOLE PER CONDUIT.  
(4) 2" DIA. SA OR 1" DIA. DN -4C

TERMINAL BOX CAN BE ROTATED FOR LEAD OUTLET AT TOP, SIDES OR BOTTOM.  
TERMINAL BOX LOCATED ON OPPOSITE SIDE WHEN F-2, V-1, V-4, V-5, V-7,  
OR C-1 MOUNTING IS SPECIFIED. BOX LOCATED ON TOP WHEN SPECIFIED.

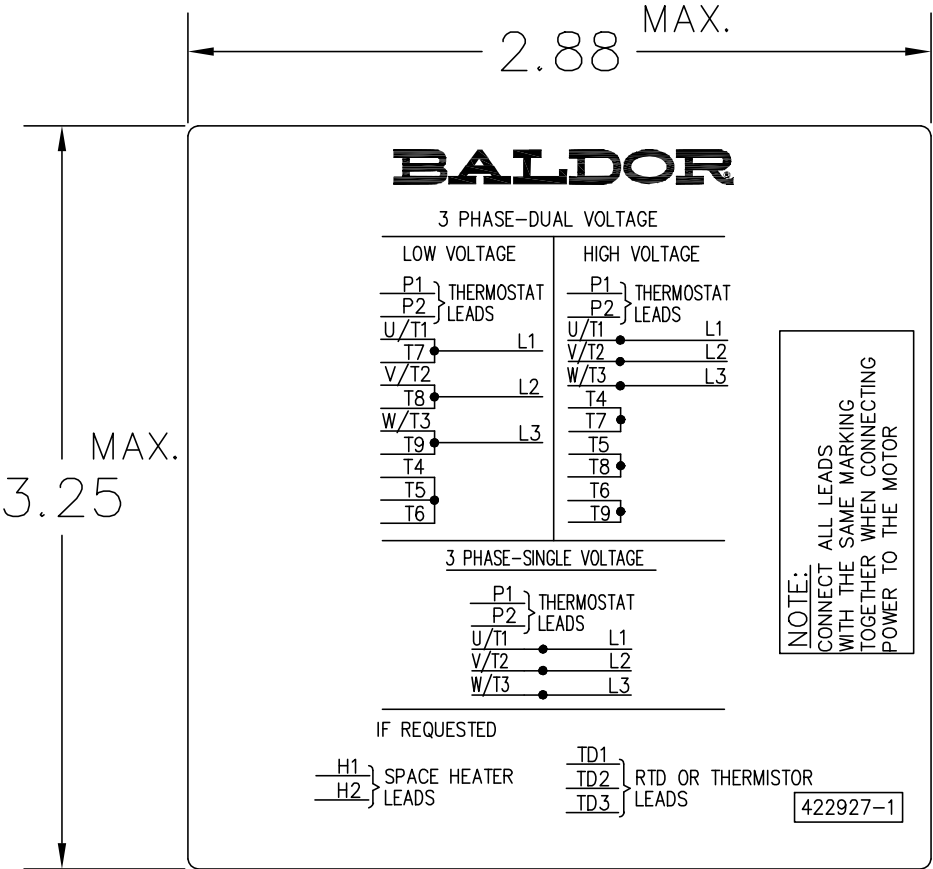
CUSTOMER IS RESPONSIBLE FOR DETERMINING THAT BALDOR'S PRODUCT WILL PERFORM SUITABLY IN THE INTENDED APPLICATION.

|                                     |                              |                   |
|-------------------------------------|------------------------------|-------------------|
| REV. DESC: ADD 706310-637 & 639 BOX | VERSION: 06                  | TDR: 000001180260 |
| REV. LTR: F                         | REVISED: 11:08:56 10/26/2021 | BY: RCGRWM        |
| FILE: \\RGG\00003\692               |                              |                   |
| MTL: -                              |                              |                   |

BALDOR - RELIANCE®

DIM SHT NEMA RL210-RL280 FL180-FL280 IEC RDL132-RDL180

422927-001



NOTE:  
DATA TO BE SIZED  
SO THAT IT FITS INTO  
MATERIAL DECAL  
DIMENSIONS. MAKE  
LETTERS & NUMBERS  
AS LARGE AS POSSIBLE.

MATERIAL: CERAMATIC DGF-P4  
PERMA GRIP ADHESIVE

ALL LETTERS, NUMBERS  
AND LINES TO BE BLACK  
ON WHITE BACKGROUND.

422927-001

|                                                       |                              |                   |
|-------------------------------------------------------|------------------------------|-------------------|
| REV. DESC: CHANGE BACKGROUND COLOR FROM GOLD TO WHITE |                              |                   |
| REV. LTR: B                                           | VERSION: 02                  | TDR: 000000788708 |
| FILE: \RGG\00000\203                                  | REVISED: 08:09:29 03/04/2013 |                   |
| MTL: -                                                | BY: RGGWT                    |                   |

**BALDOR**

EXTERNAL CONNECTION LABEL

SH 1 of 1