BALDOR
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BALDOR • RELIANCE

# Product Information Packet

# D2510R

## 10HP,1750RPM,DC,2113ATY,TEFC,



For Baldor Sales and Support, Please Contact: Walker EMD • http://www.walkeremd.com • Toll-Free: (800) 876-4444 • Phone: (203) 426-7700 • Fax: (203) 426-7800

| Part Detail | | | |
|---|---|---|---|
| **Type:** | DC | **Prod. Type:** | TR |
| **Power Code:** | C | **Weight:** | 379 |
| **Frame Group:** | MC 2113ATZ | **Mounting Pos.:** | F1 |
| **HP:** | 10 | **Enclosure:** | TEFC |
| **RPM:** | 1750/2300 | **Wound:** | STAB SHUNT |
| **Service Factor:** | 1.0 | **Arm V:** | 240 |
| **Arm A:** | 35.50 | **Field V:** | 150 |
| **Field A:** | 3.13 | **Field A Hot:** | 2.19/1.58 |
| **Insulation Class:** | F | **Ambient:** | 40 |
| **Duty:** | CONT | **DE Bearing:** | 50BC03J30X |
| **ODE Bearing:** | 45BC02J30X | **Brushes:** | 419904-51AB |
| **Brush Qty.:** | | | |

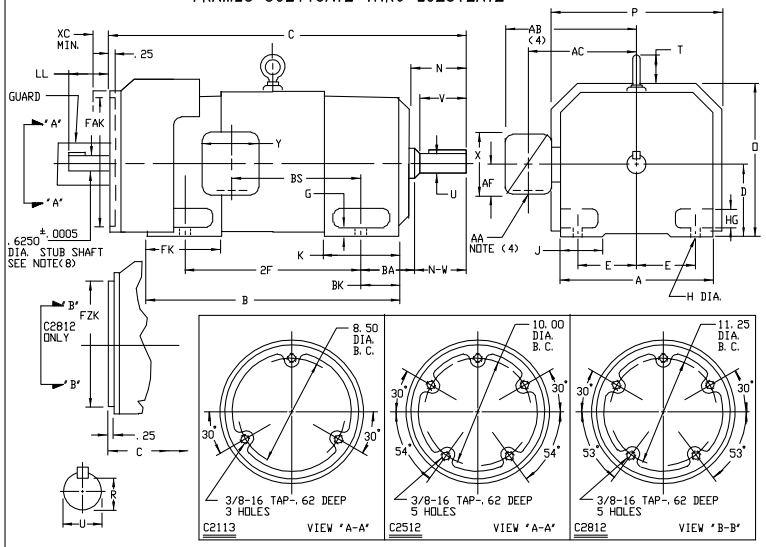
609951-013

# INDUSTRIAL DIRECT CURRENT MOTORS AND GENERATORS – RPM ! ! !

ENCLOSURE: TOTALLY ENCLOSED
MOUNTING:FOOT
METHOD OF DRIVE:COUPLED OR BELTED

COOLING: FAN COOLED
ACCESSORIES: PROVISION FOR TACHOMETER MOUNTING ONLY WHEN SPECIFIED

## FRAMES SC2113ATZ THRU LC2812ATZ




DIMENSIONS ARE IN INCHES

| FRAME | A | DIA (1) | E | G | H | HG | J | D | P | T | BA | K | FK | BK | FAK (6) | FZK (7) | XC (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SC2113ATZ-LC2113ATZ | 10.25 | 5.25 | 4.25 | .44 | .44 | 1.38 | 1.75 | 11.62 | 12.75 | 1.38 | 3.50 | 5.19 | 6.81 | 2.38 | 9.750 | N/A | 1.25 |
| SC2512ATZ-LC2512ATZ | 12.31 | 6.25 | 5.00 | .50 | .56 | 1.62 | 2.00 | 13.62 | 14.75 | 1.94 | 4.25 | 6.06 | 8.00 | 3.00 | 11.250 | N/A | 1.25 |
| MC2812ATZ-LC2812ATZ | 13.78 | 7.00 | 5.50 | .62 | .56 | 1.88 | 2.75 | 15.06 | 16.12 | 2.31 | 4.75 | 6.75 | 9.19 | 3.50 | N/A | 12.500 | 1.25 |

| FRAME | C | B | BS | 2F | DRIVE END SHAFT AND KEY N | N-W | U (2) | V | R (3) | SQ. | LGTH. | WT. LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SC2113ATZ | 32.19 | 22.50 | 11.38 | 18.00 | 4.00 | 3.75 | 1.875 | 3.50 | 1.591 | 500 | 2.50 | 355 |
| MC2113ATZ | 33.44 | 23.75 | 12.62 | 18.00 | 4.00 | 3.75 | 1.875 | 3.50 | 1.591 | 500 | 2.50 | 380 |
| LC2113ATZ | 35.06 | 25.38 | 14.25 | 18.00 | 4.00 | 3.75 | 1.875 | 3.50 | 1.591 | 500 | 2.50 | 410 |
| SC2512ATZ | 35.94 | 25.06 | 12.06 | 20.00 | 4.50 | 4.25 | 2.125 | 4.00 | 1.845 | 500 | 3.00 | 555 |
| MC2512ATZ | 37.44 | 26.56 | 13.56 | 20.00 | 4.50 | 4.25 | 2.125 | 4.00 | 1.845 | 500 | 3.00 | 590 |
| LC2512ATZ | 38.94 | 28.06 | 15.06 | 20.00 | 4.50 | 4.25 | 2.125 | 4.00 | 1.845 | 500 | 3.00 | 630 |
| MC2812ATZ | 41.62 | 29.94 | 14.25 | 22.00 | 5.00 | 4.75 | 2.375 | 4.50 | 2.021 | 625 | 3.50 | 835 |
| LC2812ATZ | 43.88 | 32.19 | 16.50 | 22.00 | 5.00 | 4.75 | 2.375 | 4.50 | 2.021 | 625 | 3.50 | 900 |

(1) 'D' DIMENSION WILL NOT BE EXCEEDED. SHIMS UP TO .03 INCHES IN THICKNESS ARE USUALLY REQUIRED FOR COUPLED OR GEARED MACHINES.
(2) 'U' VARIES----+.000 -.001
(3) 'R' VARIES----+.000 -.015
(4) TERMINAL BOX VARIES WITH H.P. FOR DIMENSIONS 'AA', 'AB', 'AC', 'AF', 'X' AND 'Y'. SEE DRAWING NUMBER 609959-1.
(5) WALLS OR OBSTRUCTIONS MUST NOT ENCROACH ON AIR INLET SPACE 'XC'.
(6) 'FAK' VARIES +.005 -.000----FACE RUNOUT AND ECCENTRICITY .007 MAX. T. I. R.
(7) 'FZK' VARIES +.000 -.005----FACE RUNOUT AND ECCENTRICITY .007 MAX. T. I. R.
(8) STUB SHAFT SUPPLIED ONLY WHEN SPECIFIED. KEY SIZE .188 X .188 X 1.00
(9) FOR RE-045 OR 5PY PROVISIONS ON "C2812" ADD 1.00 TO "LL" DIMENSION. TERMINAL BOX CAN BE ROTATED FOR LEAD OUTLET AT TOP, SIDES OR BOTTOM. TERMINAL BOX LOCATED ON OPPOSITE SIDE WHEN F-2, W-1, W-4, W-5, W-7, OR C-1 MOUNTING IS SPECIFIED. BOX LOCATED ON TOP WHEN SPECIFIED. MOTOR WEIGHT MAY VARY 15% FOR NON-STANDARD RATINGS AND/OR ACCESSORIES. IF MOUNTING CLEARANCE DETAILS ARE REQUIRED, CONSULT FACTORY.

| TACHOMETER | LL |
|---|---|
| BC-42 | 4.25 |
| BC-46 | |
| RD-11 | |
| RD-12 | |
| RD-51 | |
| RD-61 | |
| RD-62 | |
| RE-210 | |
| M627, M628 | |
| M727, M737 | |
| M738 | |
| DYNAPAR 74S | |
| RE-045 | 3.80 |
| 5PY | 1.12 |
| | SEE NOTE (9) |

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

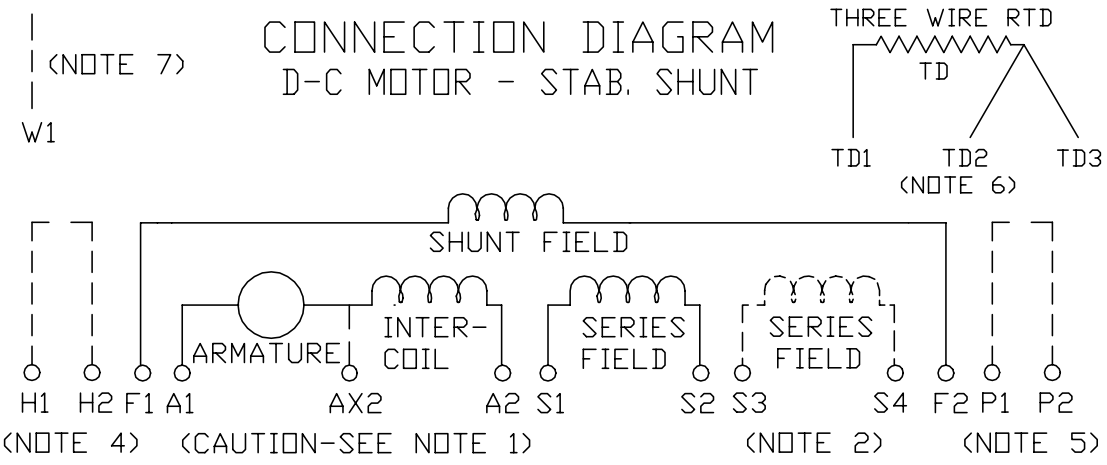
| | | |
|---|---|---|
| REV. DESC: LOADED TO BUS | | |
| REV. LTR: – | VERSION: 00 | TDR: 000000577407 |
| FILE: \RGG\00015\557 | REVISED: 11:02:01 01/26/2011 | BY: CONNAS |
| MTL: – | | |

BALDOR

DIMENSION DRAWING,SC2113ATZ – LC2812ATZ,TEFC,FOOT MTG
SH 1 of 1

609951-013

# CONNECTION DIAGRAM
## D-C MOTOR - STAB. SHUNT




ARMATURE AND FIELD EXTERNAL CONNECTIONS
WARNING- SEE NOTE 8 FOR GROUNDING INSTRUCTIONS


ROTATION FACING COMMUTATOR END

1. CAUTION — ARMATURE AND SERIES FIELD MAY HAVE MULTIPLE LEADS. CONNECT ALL LUGS WITH THE SAME MARKING TOGETHER.
2. OPTIONAL SERIES FIELD IS MARKED S3 AND S4. FOR CUMULATIVE SERIES FIELD, CONNECT S3 TO S2 AND CONNECT S4 TO NEGATIVE. FOR DIFFERENTIAL SERIES FIELD CONNECT S4 TO S2 AND S3 TO NEGATIVE.
3. OPTIONAL CONTROL SIGNAL LEAD IS MARKED AX2. ALWAYS TAKE INTERPOLE DROP BETWEEN A2 AND AX2. NOTE: NEMA DESIGNATION FOR AX2 IS LETTER C.
4. SPACE HEATERS, WHEN PROVIDED, WILL HAVE LEADS MARKED H1 AND H2, H3, H4, ETC.
5. THERMAL PROTECTOR, WHEN PROVIDED, WILL HAVE LEADS MARKED P1 AND P2, P3, P4, ETC.
6. WINDING RTD'S, WHEN PROVIDED, WILL HAVE LEADS MARKED TD1, TD2, &TD3
7. BRUSH WEAR SENSOR, WHEN PROVIDED, WILL HAVE LEAD MARKED W1.
8. WARNING — MOTOR MUST BE GROUNDED TO PREVENT SERIOUS INJURIES TO PERSONNEL. GROUND THE MOTOR PER IEC, NATIONAL ELECTRICAL CODE AND ANY APPLICABLE LOCAL ELECTRICAL CODES. A TAPPED HOLE IS PROVIDED IN THE CONDUIT BOX, ON THE FOOT, FRAME BRACE OR OPPOSITE OPPOSITE DRIVE END BRACKET, ADJACENT TO THE TERMINAL BOX FOR FOR MOTOR GROUNDING. GROUND LEAD, WHEN PROVIDED, WILL BE GREEN.

CUSTOMER _____ CUSTOMER ORDER NO. _____ RELIANCE S.O. NO. _____

| | | | |
|---|---|---|---|
| RELIANCE ELECTRIC<br>CLEVELAND, OHIO 44117 U. S. A. | DR. BY N. L. EVANS<br>CK. BY N. JUESCHKE<br>APP. BY E. J. HINGER<br>DATE 5-5-69 | CONNECTION DIAGRAM | 406770-1<br>ORIGINAL AT RRC |

C/R 290048, 354478, 354480

| REL S.O. | FRAME | RATING | RPM | ARM. VOLTS | ARM. AMPS |
|---|---|---|---|---|---|
| | MC2113AT | 10.0HP | 1750 | 240 | 35.5 |

| WINDING TYPE | S.F. | ENCL. | AMB °C/INSUL | DUTY | FIELD VOLTS |
|---|---|---|---|---|---|
| STAB. SHUNT | 1.0 | TEFC | 40/F | CONT | 150 |

| POWER CODE | TYPE | $WK^2$ (LB-$FT^2$) | HOT ARM.CIR.RES. | FLD. AMPS@25 °C | HOT FIELD RES |
|---|---|---|---|---|---|
| D | TR | 2.564 | .506 | 3.13 | 68.1 |

| ARM. CIR. IND. (mh) | FIELD IND. (H) | COOLING AIR(CFM/IN $H_2O$) | TURNS PER COIL SHUNT/SERIES | TEST DATE |
|---|---|---|---|---|
| 5.18 | 8.91 | -/- | 650/1 | - |

LOAD PERFORMANCE

| LOAD | AMPERES | TORQUE IN LB.-FT. | OUTPUT IN HP | RPM | % EFFICIENCY |
|---|---|---|---|---|---|
| NO LOAD | 1.5 | 0 | 0 | 1941 | 0 |
| 1/4 | 8.9 | 6.39 | 2.32 | 1904 | 68.1 |
| 2/4 | 18 | 14.0 | 4.98 | 1868 | 78.2 |
| 3/4 | 27 | 21.5 | 7.52 | 1837 | 80.9 |
| 4/4 | 36 | 28.8 | 9.93 | 1810 | 81.8 |
| O.L. | 53 | 42.7 | 14.4 | 1766 | 80.5 |
| | | | | | |

| RPM VS. FIELD AMPS | | | Eg VS. FIELD AMPS | |
|---|---|---|---|---|
| FIELD AMPS | RPM N.L. | RPM F.L. | Eg N.L. @ BASE SPEED | Eg F.L. @ BASE SPEED |
| 2.20 | 1941 | 1810 | 214 | 208 |
| 2.00 | 2082 | 1924 | 201 | 195 |
| 1.81 | 2246 | 2070 | 187 | 181 |
| 1.62 | 2458 | 2256 | 170 | 165 |
| 1.43 | 2739 | 2500 | 153 | 148 |

MAXIMUM SAFE SPEED = 4500 RPM

REMARKS: TYPICAL DATA

RELIANCE ELECTRIC

DR. BY J. MARTIN
CK. BY J. MARTIN
APP. BY T. EVON
DATE 6/21/85

D-C MOTOR PERFORMANCE DATA

DG6241C

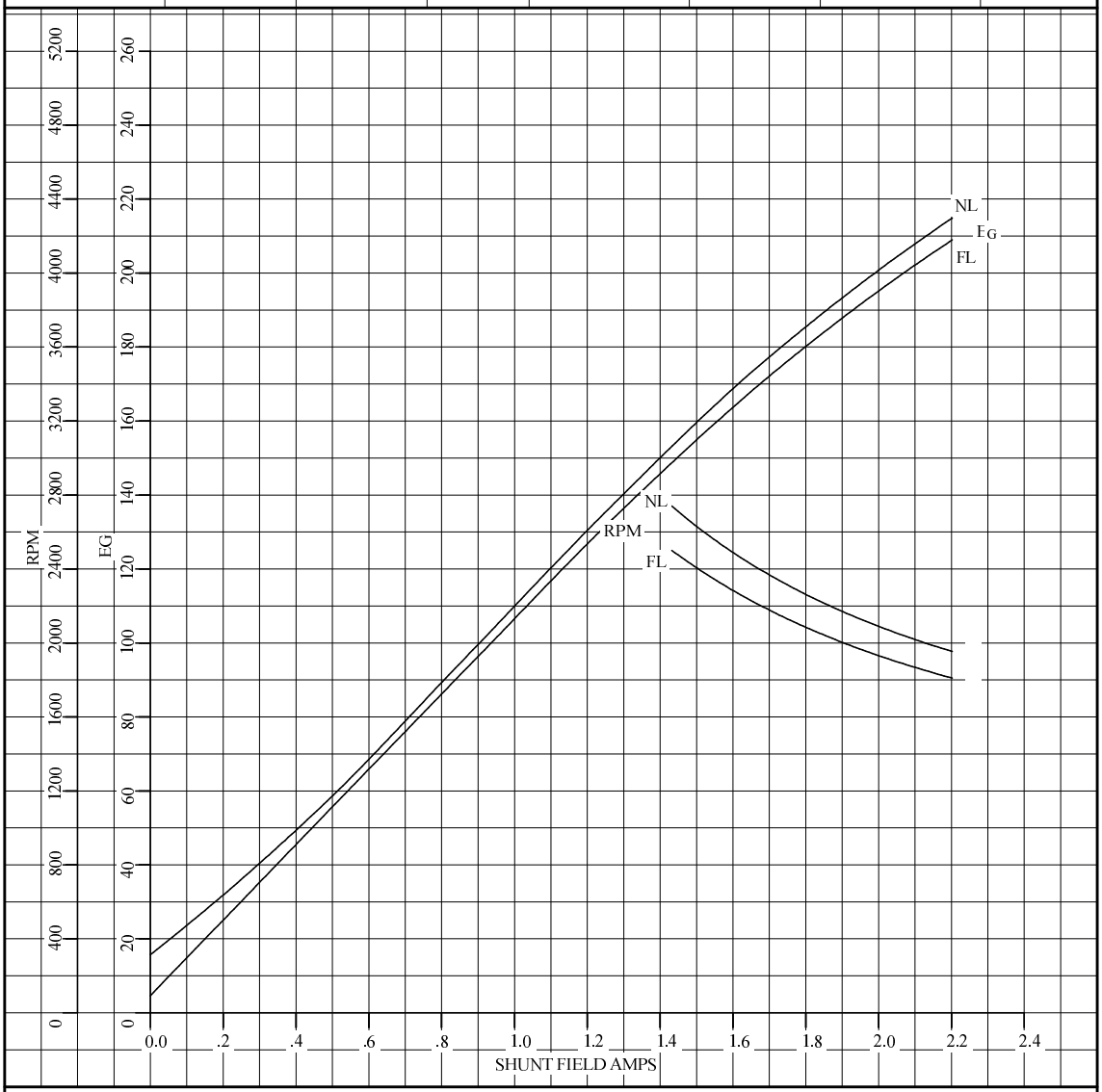
ISSUE DATE 6/21/85

| REL S.O. | FRAME | RATING | BASE SPEED | WINDING TYPE |
|---|---|---|---|---|
| | MC2113AT | 10.0HP | 1750 | STAB SHUNT |

| S.F. | ENCL. | AMB °C/INSUL | DUTY | POWER CODE/FORM FACTOR | TYPE | $WK^2$ (LB-$FT^2$) |
|---|---|---|---|---|---|---|
| 1.0 | TEFC | 40/F | CONT | D | TR | 2.564 |

| COOLING AIR (CFM/IN $H_2O$) | $\bar{J}$ (sec) | $\bar{R}$ (hot) | $T_E$ | $T_M$ | BASIC RPM | MAX CONT RPM | WINDER RPM | MAX. SAFE |
|---|---|---|---|---|---|---|---|---|
| -/- | .485 | .0922 | .00909 | .0447 | 2300 | 2500 | - | 4500 |

| WINDING | VOLTS | RESISTANCE | | CURRENT | | INDUCTANCE | TURNS PER COIL |
|---|---|---|---|---|---|---|---|
| | | 25°C | HOT | 25°C | HOT | | |
| ARM CIRCUIT | 240 | .343 | .507 | - | 35.5 | 5.19 mH | - |
| SERIES S1-S2 | - | .00603 | .00894 | - | 35.5 | - | 1.00 |
| SHUNT F1-F2 | 150 | 47.8 | 68.1 | 3.14 | 2.20 | 8.91 H | 650 |




REMARKS: TYPICAL DATA
CURVES VALID FOR NAMEPLATE SPEED RANGE ONLY

RELIANCE ELECTRIC

DR. BY J. MARTIN
CK. BY J. MARTIN
APP. BY T. EVON
DATE 6/21/85

**D-C APPLICATION DATA**

SG6241C

ISSUE DATE 6/21/85