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# Product Information Packet

# D5050RS-BV

## 50HP,1750RPM,DC,2512ATZ,DPG-FV,



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

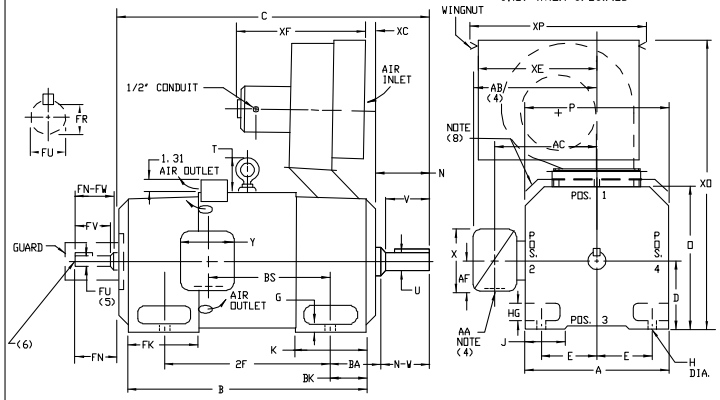
| Part Detail | | | |
|---|---|---|---|
| **Type:** | DC | **Prod. Type:** | TR |
| **Power Code:** | C | **Weight:** | 610 |
| **Frame Group:** | LC 2512ATZ | **Mounting Pos.:** | F2 |
| **HP:** | 50 | **Enclosure:** | DPFV |
| **RPM:** | 1750/2100 | **Wound:** | STAB SHUNT |
| **Service Factor:** | 1.0 | **Arm V:** | 500 |
| **Arm A:** | 84.00 | **Field V:** | 300 |
| **Field A:** | 3.38 | **Field A Hot:** | 2.44/1.85 |
| **Insulation Class:** | F | **Ambient:** | 40 |
| **Duty:** | CONT | **DE Bearing:** | 60BC03J30X |
| **ODE Bearing:** | 50BC02J30X | **Brushes:** | 419904-51AB |
| **Brush Qty.:** | | | |

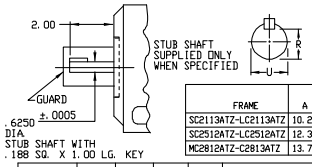
609952-096

# INDUSTRIAL DIRECT CURRENT MOTORS AND GENERATORS – RPM III

ENCLOSURE: DRIP-PROOF FULLY-GUARDED, SPLASHPROOF
MOUNTING:FOOT
METHOD OF DRIVE: COUPLED OR BELTED
FRAMES SC2113ATZ THRU C2813ATZ

COOLING: FORCE VENTILATED WITH INTEGRAL BLOWER AND MOTOR AIR FILTERED-SPECIAL BAFFLE
ACCESSORIES: PROVISION FOR TACHOMETER MOUNTING ONLY WHEN SPECIFIED



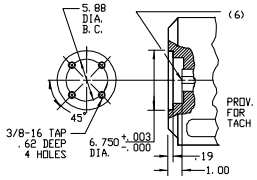




DIMENSIONS ARE IN INCHES

| FRAME | XC | XE | XF | XD | XP |
|---|---|---|---|---|---|
| SC2113ATZ-LC2113ATZ | 1.00 | 10.00 | 17.25 | 28.00 | 14.50 |
| SC2512ATZ-LC2512ATZ | 2.50 | 10.00 | 17.25 | 30.31 | 14.50 |
| MC2812ATZ-C2813ATZ | 1.75 | 10.00 | 18.50 | 30.62 | 14.50 |

| FRAME | A | BK(1) | E | G | H | HG | J | O | P | T | BA | K | FK | BK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SC2113ATZ-LC2113ATZ | 10.25 | 5.25 | 4.25 | .44 | .44 | 1.38 | 1.75 | 10.44 | 10.31 | 2.56 | 3.50 | 5.19 | 6.81 | 2.38 |
| SC2512ATZ-LC2512ATZ | 12.31 | 6.25 | 5.00 | .50 | .56 | 1.62 | 2.00 | 12.50 | 12.44 | 3.06 | 4.25 | 6.06 | 8.00 | 3.00 |
| MC2812ATZ-C2813ATZ | 13.78 | 7.00 | 5.50 | .62 | .56 | 1.88 | 2.75 | 14.00 | 13.94 | 3.38 | 4.75 | 6.75 | 9.19 | 3.50 |

| FRAME | C | B | BS | 2F | DRIVE END SHAFT AND KEY N | N-W | U(2) | V | R(3) | SQ. | LGTH. | OPPOSITE DRIVE END SHAFT AND KEY(5) FN | FN-FW | FU(2) | FV | FR(3) | SQ. | LGTH. | WT. LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SC2113ATZ | 28.38 | 22.50 | 11.38 | 18.00 | 4.00 | 3.75 | 1.875 | 3.50 | 1.591 | .500 | 2.50 | 3.50 | 3.25 | 1.625 | 3.00 | 1.416 | .375 | 2.25 | 345 |
| MC2113ATZ | 29.62 | 23.75 | 12.62 | 18.00 | 4.00 | 3.75 | 1.875 | 3.50 | 1.591 | .500 | 2.50 | 3.50 | 3.25 | 1.625 | 3.00 | 1.416 | .375 | 2.25 | 370 |
| LC2113ATZ | 31.25 | 25.38 | 14.25 | 18.00 | 4.00 | 3.75 | 1.875 | 3.50 | 1.591 | .500 | 2.50 | 3.50 | 3.25 | 1.625 | 3.00 | 1.416 | .375 | 2.25 | 400 |
| SC2512ATZ | 31.69 | 25.06 | 12.06 | 20.00 | 4.50 | 4.25 | 2.125 | 4.00 | 1.845 | .500 | 3.00 | 4.00 | 3.75 | 1.875 | 3.50 | 1.591 | .500 | 2.50 | 535 |
| MC2512ATZ | 33.19 | 26.56 | 13.56 | 20.00 | 4.50 | 4.25 | 2.125 | 4.00 | 1.845 | .500 | 3.00 | 4.00 | 3.75 | 1.875 | 3.50 | 1.591 | .500 | 2.50 | 570 |
| LC2512ATZ | 34.69 | 28.06 | 15.06 | 20.00 | 4.50 | 4.25 | 2.125 | 4.00 | 1.845 | .500 | 3.00 | 4.00 | 3.75 | 1.875 | 3.50 | 1.591 | .500 | 2.50 | 610 |
| MC2812ATZ | 37.38 | 29.94 | 14.25 | 22.00 | 5.00 | 4.75 | 2.375 | 4.50 | 2.021 | .625 | 3.50 | 4.50 | 4.25 | 2.125 | 4.00 | 1.845 | .500 | 3.00 | 810 |
| LC2812ATZ | 39.62 | 32.19 | 16.50 | 22.00 | 5.00 | 4.75 | 2.375 | 4.50 | 2.021 | .625 | 3.50 | 4.50 | 4.25 | 2.125 | 4.00 | 1.845 | .500 | 3.00 | 885 |
| LC2813ATZ | 41.25 | 33.81 | 18.12 | 25.00 | 5.00 | 4.75 | 2.375 | 4.50 | 2.021 | .625 | 3.50 | 4.50 | 4.25 | 2.125 | 4.00 | 1.845 | .500 | 3.00 | 940 |




(1) 'D' DIMENSION WILL NOT BE EXCEEDED. SHIMS UP TO .03 INCHES IN THICKNESS ARE USUALLY REQUIRED FOR COUPLED OR GEARED MACHINES.
(2) 'U' AND 'FU' VARY----+.000 -.001.
(3) 'R' AND 'FR' VARY----+.000 -.015
(4) TERMINAL BOX VARIES WITH H.P. FOR DIMENSIONS 'AA', 'AB', 'AC', 'AF', 'X' AND 'Y'. REFER TO BOX D/S. (STD. 609959-1, 'X/P' 609959-2, MILL 609959-3)
(5) OPPOSITE DRIVE END SHAFT SUPPLIED ONLY WHEN SPECIFIED.
(6) MOTOR SHAFT TAPPED FOR SCREW-IN STUB SHAFT.
(7) WHEN THE MOTOR APPLICATION DOES NOT REQUIRE THE USE OF OPP. DRIVE END, ADD .25 TO 'C' DIM. FOR BRACKET COVER.
(8) FOR HORIZONTAL APPLICATIONS ONLY.
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.
BLOWER ASSEMBLY CAN BE LOCATED AT POSITIONS 1, 2, OR 4.
MOTOR WEIGHT MAY VARY 15% FOR NON-STANDARD RATINGS AND/OR ACCESSORIES.
IF MOUNTING CLEARANCE DETAILS ARE REQUIRED, CONSULT FACTORY.
BLOWER MOTOR

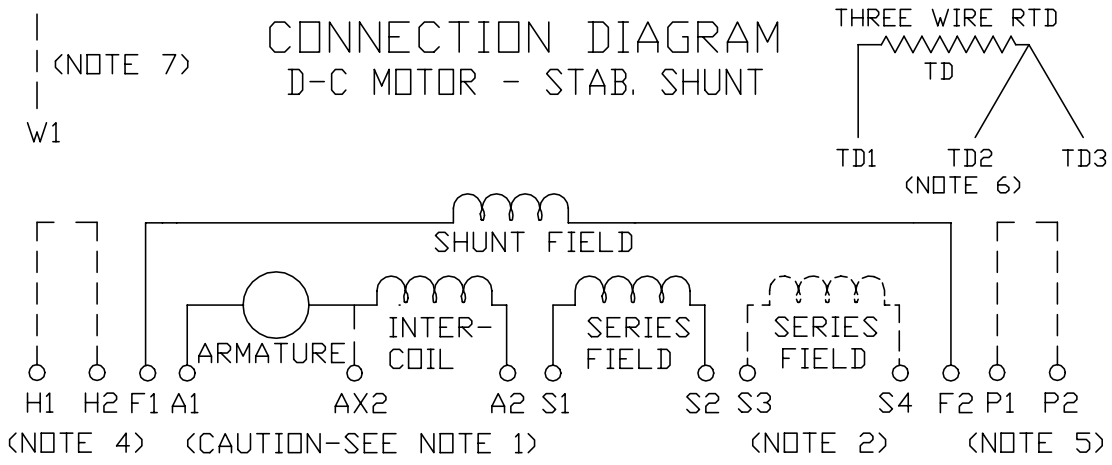
CUSTOMER IS RESPONSIBLE FOR DETERMINING THAT BALDOR'S PRODUCT WILL PERFORM SUITABLY IN THE INTENDED APPLICATION.

| | | |
|---|---|---|
| REV. DESC: LOADED TO BUS | | |
| REV. LTR: – | VERSION: 00 | TDR: 000000577407 |
| FILE: \RGG\00015\585 | REVISED: 11:42:37 01/26/2011 | BY: CONNAS |
| MTL: – | | |

BALDOR
DIMENSION DRAWING,SC2113ATZ – C2813ATZ,DPP,FOOT MTG.
SH 1 of 1

609952-096

# 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
CLEVELAND, OHIO 44117 U. S. A.

DR. BY N. L. EVANS
CK. BY N. JUESCHKE
APP. BY E. J. HINGER
DATE 5-5-69

CONNECTION DIAGRAM

406770-1
ORIGINAL AT RRC

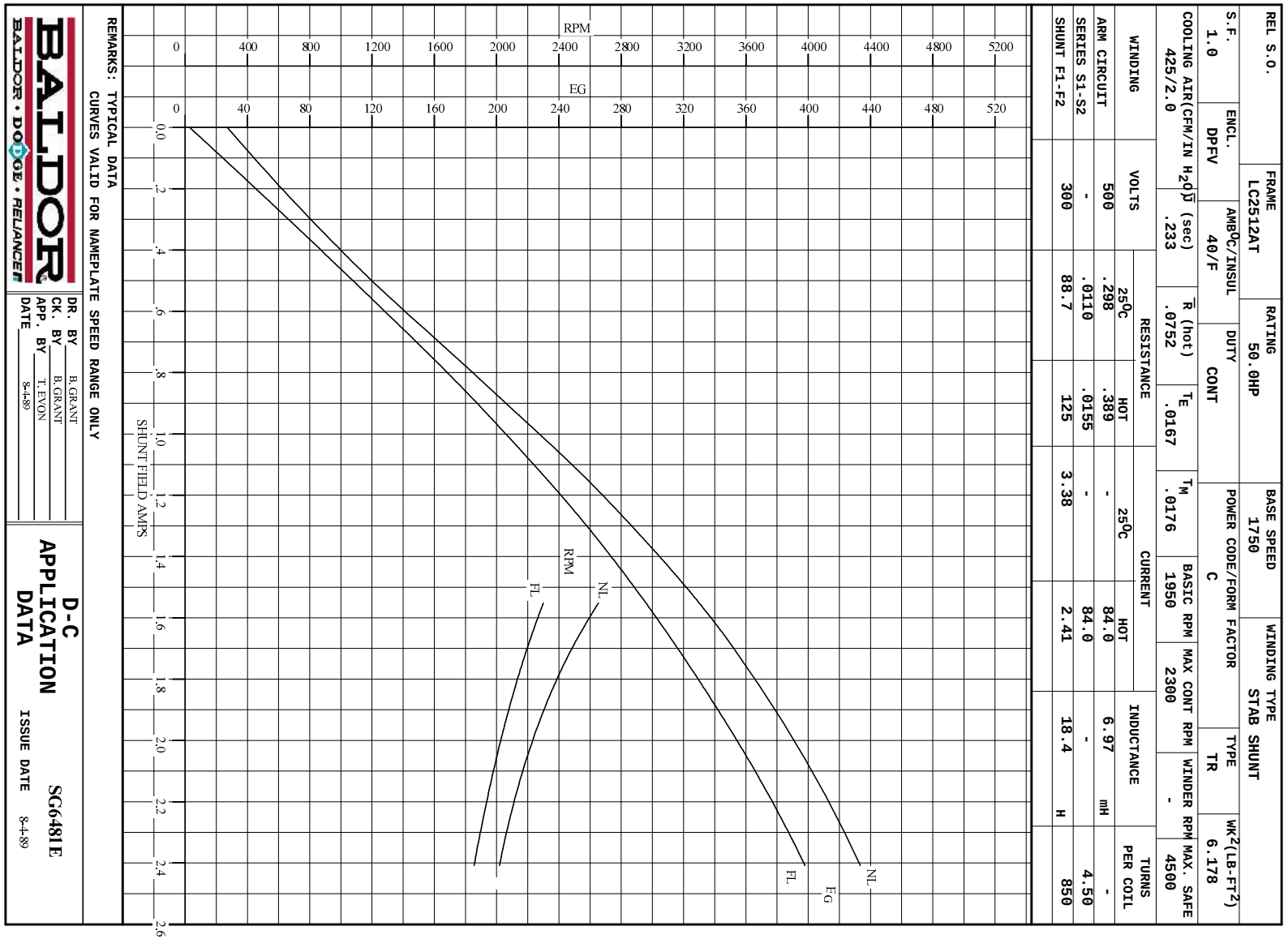
C/R 290048, 354478, 354480

| REL S.O. | FRAME | RATING | BASE SPEED | WINDING TYPE |
|---|---|---|---|---|
| | LC2512AT | 50.0HP | 1750 | STAB SHUNT |

| S.F. | ENCL. | AMB°C/INSUL | DUTY | POWER CODE/FORM FACTOR | TYPE | WK²(LB-FT²) |
|---|---|---|---|---|---|---|
| 1.0 | DPFV | 40/F | CONT | C | TR | 6.178 |

| COOLING AIR(CFM/IN $H_2O$) | $\bar{T}$ (sec) | $\bar{R}$ (hot) | $T_E$ | $T_M$ | BASIC RPM | MAX CONT RPM | WINDER RPM | MAX. SAFE |
|---|---|---|---|---|---|---|---|---|
| 425/2.0 | .233 | .0752 | .0167 | .0176 | 1950 | 2300 | - | 4500 |

| WINDING | VOLTS | RESISTANCE | | CURRENT | | INDUCTANCE | TURNS |
|---|---|---|---|---|---|---|---|
| | | 25°C | HOT | 25°C | HOT | | PER COIL |
| ARM CIRCUIT | 500 | .298 | .389 | - | 84.0 | 6.97 | - |
| SERIES S1-S2 | - | .0110 | .0155 | - | 84.0 | - | 4.50 |
| SHUNT F1-F2 | 300 | 88.7 | 125 | 3.38 | 2.41 | 18.4 | 850 |
| | | | | | | mH | H |




REMARKS: TYPICAL DATA

CURVES VALID FOR NAMEPLATE SPEED RANGE ONLY

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DR. BY B. GRANT
CK. BY B. GRANT
APP. BY T. EVON
DATE 8-4-89

D-C APPLICATION DATA

SG6481E

ISSUE DATE 8-4-89

| REL S.O. | FRAME | RATING | RPM | ARM. VOLTS | ARM. AMPS |
|---|---|---|---|---|---|
| | LC2512AT | 50.0HP | 1750 | 500 | 84.0 |

| WINDING TYPE | S.F. | ENCL. | AMB °C/INSUL | DUTY | FIELD VOLTS |
|---|---|---|---|---|---|
| STAB. SHUNT | 1.0 | DPFV | 40/F | CONT | 300 |

| POWER CODE | TYPE | $WK^2$(LB-$FT^2$) | HOT ARM.CIR.RES. | FLD. AMPS@25 °C | HOT FIELD RES |
|---|---|---|---|---|---|
| C | TR | 6.178 | .388 | 3.38 | 124 |

| ARM. CIR. IND. (mh) | FIELD IND. (H) | COOLING AIR(CFM/IN $H_2O$) | TURNS PER COIL SHUNT/SERIES | TEST DATE |
|---|---|---|---|---|
| 6.96 | 18.3 | 425/2.0 | 850/4.5 | - |

LOAD PERFORMANCE

| LOAD | AMPERES | TORQUE IN LB.-FT. | OUTPUT IN HP | RPM | % EFFICIENCY |
|---|---|---|---|---|---|
| NO LOAD | 1.9 | 0 | 0 | 2005 | 0 |
| 1/4 | 21 | 33.8 | 12.5 | 1949 | 82.5 |
| 2/4 | 42 | 71.0 | 25.8 | 1907 | 88.1 |
| 3/4 | 63 | 108 | 38.5 | 1875 | 88.8 |
| 4/4 | 84 | 143 | 50.7 | 1856 | 88.2 |
| O.L. | 126 | 211 | 73.4 | 1828 | 85.8 |
| | | | | | |

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 |
|---|---|---|---|---|
| 2.40 | 2005 | 1855 | 433 | 397 |
| 2.19 | 2115 | 1938 | 412 | 375 |
| 1.97 | 2244 | 2036 | 389 | 351 |
| 1.76 | 2418 | 2154 | 361 | 325 |
| 1.55 | 2654 | 2300 | 329 | 296 |

MAXIMUM SAFE SPEED = 4500 RPM

REMARKS: TYPICAL DATA

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DR. BY B. GRANT
CK. BY B. GRANT
APP. BY T. EVON
DATE 8-4-89

D-C MOTOR PERFORMANCE DATA

DG6481E

ISSUE DATE 8-4-89