

# ABB BALDOR RELIANCE III

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## Customer information packet

### SPM4109TS

40HP, 3530RPM, 3PH, 60HZ, 324TS, 1064M, TEFC, F

Class - CLI GP A,B,C,D; CLII GP F,G

Division - Division II

**Specifications**

|                                       |                                                         |
|---------------------------------------|---------------------------------------------------------|
| <b>Enclosure</b>                      | TEFC                                                    |
| <b>Frame</b>                          | 324TS                                                   |
| <b>Frame Material</b>                 | Iron                                                    |
| <b>Frequency</b>                      | 60.00 Hz                                                |
| <b>Haz Area Class and Group</b>       | CLI GP A,B,C,D; CLII GP F,G                             |
| <b>Haz Area Division</b>              | Division II                                             |
| <b>Motor Letter Type</b>              | Three Phase                                             |
| <b>Output @ Frequency</b>             | 40.000 HP @ 60 HZ                                       |
| <b>Phase</b>                          | 3                                                       |
| <b>Synchronous Speed @ Frequency</b>  | 3600 RPM @ 60 HZ                                        |
| <b>Voltage @ Frequency</b>            | 230.0 V @ 60 HZ<br>460.0 V @ 60 HZ                      |
| <b>Agency Approvals</b>               | CSA<br>CURUSEEV<br>NEMA PREMIUM<br>NEMA_PREMIUM<br>WEEE |
| <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>Current @ Voltage</b>              | 90.000 A @ 230.0 V<br>45.000 A @ 460.0 V                |
| <b>Design Code</b>                    | A                                                       |
| <b>Drip Cover</b>                     | No Drip Cover                                           |
| <b>Duty Rating</b>                    | CONT                                                    |
| <b>Efficiency @ 100% Load</b>         | 93.6 %                                                  |
| <b>Electrically Isolated Bearing</b>  | Not Electrically Isolated                               |
| <b>Feedback Device</b>                | NO FEEDBACK                                             |
| <b>Front Shaft Indicator</b>          | None                                                    |

**Part Detail**

|                     |            |
|---------------------|------------|
| <b>Revision</b>     | E          |
| <b>Type</b>         | AC         |
| <b>Mech. spec.</b>  | 10T013     |
| <b>Base</b>         |            |
| <b>Status</b>       | PRD/A      |
| <b>Elec. spec.</b>  | 10WGX658   |
| <b>Layout</b>       | 10LYT013   |
| <b>Eff. date</b>    | 04-17-2026 |
| <b>CD Diagram</b>   | CD0180     |
| <b>Poles</b>        | 02         |
| <b>Leads</b>        | 9#8        |
| <b>Proprietary</b>  | False      |
| <b>Created date</b> | 10-03-2023 |

|                                      |                              |
|--------------------------------------|------------------------------|
| <b>Haz Area Temp Code</b>            | T3C                          |
| <b>Heater Indicator</b>              | No Heater                    |
| <b>High Voltage Full Load Amps</b>   | 45.0 a                       |
| <b>Insulation Class</b>              | F                            |
| <b>Inverter Code</b>                 | Inverter Duty                |
| <b>KVA Code</b>                      | G                            |
| <b>Lifting Lugs</b>                  | Standard Lifting Lugs        |
| <b>Locked Bearing Indicator</b>      | Locked Bearing               |
| <b>Max Speed</b>                     | 4800 rpm                     |
| <b>Motor Lead Quantity/Wire Size</b> | 9 @ 8 AWG                    |
| <b>Motor Lead Termination</b>        | Flying Leads                 |
| <b>Motor Standards</b>               | NEMA                         |
| <b>Motor Type</b>                    | 1064M                        |
| <b>Mounting Arrangement</b>          | F1                           |
| <b>Number of Poles</b>               | 2                            |
| <b>Overall Length</b>                | 29.13 IN                     |
| <b>Power Factor</b>                  | 91                           |
| <b>Product Family</b>                | Chemical Processing (Not DC) |
| <b>Pulley End Bearing Type</b>       | Ball                         |
| <b>Pulley Face Code</b>              | Standard                     |
| <b>Pulley Shaft Indicator</b>        | Standard                     |
| <b>Rodent Screen</b>                 | None                         |
| <b>Service Factor</b>                | 1.15                         |
| <b>Shaft Diameter</b>                | 1.875 IN                     |
| <b>Shaft Ground Indicator</b>        | No Shaft Grounding           |
| <b>Shaft Rotation</b>                | Reversible                   |
| <b>Shaft Slinger Indicator</b>       | No Slinger                   |
| <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>      | None                         |
| <b>Vibration Sensor Indicator</b>    | No Vibration Sensor          |
| <b>Winding Thermal 1</b>             | None                         |

Winding Thermal 2

None

**Nameplate**
**NP4439B05C23L**

|                         |              |    |       |      |   |         |      |    |     |             |        |         |    |    |        |      |            |  |  |                         |               |      |      |     |     |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
|-------------------------|--------------|----|-------|------|---|---------|------|----|-----|-------------|--------|---------|----|----|--------|------|------------|--|--|-------------------------|---------------|------|------|-----|-----|-----|--|--|--|------------------------|--|--|--|--|-----|--|--|--|--|--------|--|--|--|--|-----|--|--|--|--|---|--|--|--|--|
| CAT #                   | SPM4109TS    |    |       |      |   |         |      |    |     |             | SER #  |         |    |    |        |      |            |  |  |                         |               | CC   | 010A | WGT | 451 | LBS |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
| SPEC                    | 10T013X658   |    |       |      |   |         |      |    |     |             | FRAME  | 324TS   |    |    |        |      |            |  |  |                         |               | ENCL | TEFC | IP  | 55  |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
| RATING                  | 40C AMB-CONT |    |       |      |   |         |      |    |     |             |        |         |    |    |        |      |            |  |  |                         | NEMA NOM. EFF | 93.6 |      |     |     |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
| HP                      | 40           |    |       |      |   |         |      |    |     |             | VOLTS  | 230/460 |    |    |        |      |            |  |  |                         |               |      |      |     |     |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
| AMPS                    | 90/45        |    |       |      |   |         |      |    |     |             | RPM    | 3530    |    |    |        |      |            |  |  |                         |               | HZ   | 60   |     |     |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
| PH                      | 3            | CL | F     | CODE | G | DES     | A    | PF | 91  | %           | SER.F. |         |    |    |        | 1.15 | SF AMP     |  |  |                         |               |      |      |     |     |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
| DE BRG                  | 6311         |    |       |      |   | ODE BRG |      |    |     |             | 6311   |         |    |    |        | LUBE | POLYREX EM |  |  |                         |               |      |      |     |     |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
| INV TYPE:               | VPWM         |    |       |      |   | SL HZ   | 1.2  |    | CHP | 60          |        | TO      | 80 |    | 1.3:1  |      |            |  |  |                         |               |      |      |     |     |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
| WK2                     | 2.75         |    | LBFT2 |      |   | MAX RPM | 4800 |    | CT  | 6           |        | TO      | 60 |    | 10:1   |      |            |  |  |                         |               |      |      |     |     |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
| MAG CUR                 | 24/12        |    |       |      |   |         |      |    |     |             | VT     | 3       |    | TO | 60     |      | 20:1       |  |  |                         |               |      |      |     |     |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
|                         |              |    |       |      |   |         |      |    |     |             |        |         |    |    |        |      |            |  |  | MEETS INTENT OF IEEE-45 |               |      |      |     |     |     |  |  |  | FOR WEATHER PROTECTION |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
|                         |              |    |       |      |   |         |      |    |     |             |        |         |    |    |        |      |            |  |  |                         |               |      |      |     |     |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
|                         |              |    |       |      |   |         |      |    |     |             |        |         |    |    |        |      |            |  |  |                         |               |      |      |     |     |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
|                         |              |    |       |      |   |         |      |    |     |             |        |         |    |    |        |      |            |  |  |                         |               |      |      |     |     |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
| CL I DIV 2 GRPS A,B,C,D |              |    |       |      |   |         |      |    |     | TEMP CODE   |        |         |    |    | T3C    |      |            |  |  | CL I INV TEMP CODE      |               |      |      |     | T3  |     |  |  |  | TEMP=                  |  |  |  |  | 200 |  |  |  |  | C      |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
| CL I ZONE 2 GRPS        |              |    |       |      |   |         |      |    |     | IIA,IIB,IIC |        |         |    |    | TEMP = |      |            |  |  | 160                     |               |      |      |     | C   |     |  |  |  | CL II INV TEMP CODE    |  |  |  |  | T3  |  |  |  |  | TEMP = |  |  |  |  | 200 |  |  |  |  | C |  |  |  |  |
| CL II DIV 2 GRPS F&G    |              |    |       |      |   |         |      |    |     | TEMP CODE   |        |         |    |    | T3C    |      |            |  |  | 1.0 SF ON PWM INVERTER  |               |      |      |     |     |     |  |  |  | POWER                  |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |
| CL II ZONE 22 GRPS IIIB |              |    |       |      |   |         |      |    |     | TEMP=       |        |         |    |    | 160    |      |            |  |  | C                       |               |      |      |     |     |     |  |  |  |                        |  |  |  |  |     |  |  |  |  |        |  |  |  |  |     |  |  |  |  |   |  |  |  |  |

**YR**

**AC Induction Motor Performance Data**

Record # 2771

Typical performance - not guaranteed values

| Winding: 10WGX658-R001 |    |              | Type: 1064M                              |                           | Enclosure: TEFC       |             |         |
|------------------------|----|--------------|------------------------------------------|---------------------------|-----------------------|-------------|---------|
| Nameplate Data         |    |              | 460 V, 60 Hz:<br>High Voltage Connection |                           |                       |             |         |
| Rated Output (HP)      |    | 40           | Full Load Torque                         |                           | 59.9 LB-FT            |             |         |
| Volts                  |    | 230/460      | Start Configuration                      |                           | direct on line        |             |         |
| Full Load Amps         |    | 90/45        | Breakdown Torque                         |                           | 343 LB-FT             |             |         |
| R.P.M.                 |    | 3530         | Pull-up Torque                           |                           | 98 LB-FT              |             |         |
| Hz                     | 60 | Phase        | 3                                        | Locked-rotor Torque       |                       | 129 LB-FT   |         |
| NEMA Design Code       |    | A            | KVA Code                                 | G                         | Starting Current      |             | 292 A   |
| Service Factor (S.F.)  |    | 1.15         |                                          | No-load Current           |                       | 11.9 A      |         |
| NEMA Nom. Eff.         |    | 93.6         | Power Factor                             | 91                        | Line-line Res. @ 25°C |             | 0.139 Ω |
| Rating - Duty          |    | 40C AMB-CONT |                                          | Temp. Rise @ Rated Load   |                       | 79°C        |         |
| S.F. Amps              |    |              |                                          | Temp. Rise @ S.F. Load    |                       | 96°C        |         |
|                        |    |              |                                          | Locked-rotor Power Factor |                       | 22          |         |
|                        |    |              |                                          | Rotor inertia             |                       | 2.75 LB-FT2 |         |

**Load Characteristics 460 V, 60 Hz, 40 HP**

| % of Rated Load | 25   | 50   | 75   | 100  | 125  | 150  | S.F.  |
|-----------------|------|------|------|------|------|------|-------|
| Power Factor    | 64   | 83   | 89   | 91   | 91   | 92   | 91    |
| Efficiency      | 90.4 | 93.5 | 93.9 | 93.6 | 92.9 | 92.1 | 93.2  |
| Speed           | 3585 | 3569 | 3551 | 3533 | 3515 | 3495 | 3522  |
| Line amperes    | 16   | 24.6 | 34.3 | 45   | 55.8 | 67   | 51.48 |

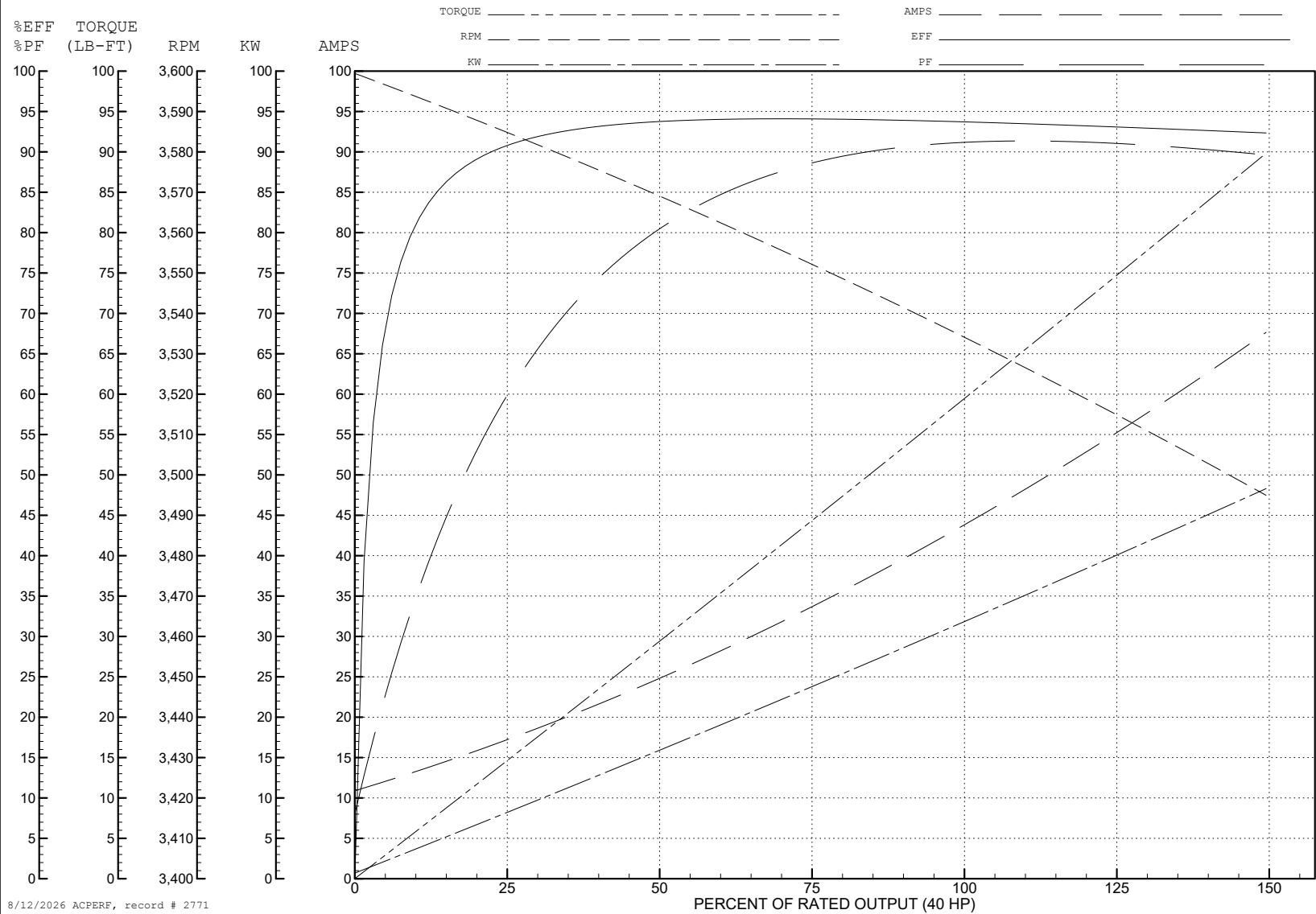
ABB Motors and Mechanical Inc.

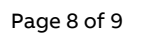
WINDING # 10WGX658

Typical performance - not guaranteed values.

40 HP 3 PH 60 HZ 3530 RPM 460 V 1064M

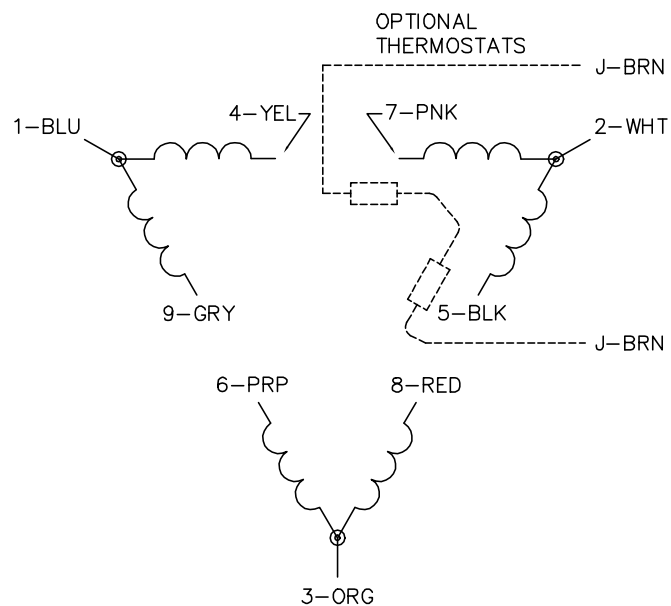
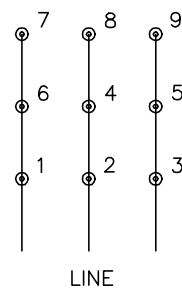
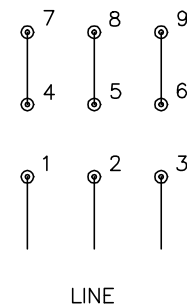
TORQUES (LB-FT): PO=343 PU=98 LR=129 LRA=292







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