

# ABB BALDOR RELIANCE III

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## Customer information packet

### VEM3116T

1HP, 1770RPM, 3PH, 60HZ, 143TC, 3520M, OPEN, F1

Class - None

Division - Not Applicable

**Specifications**

|                                |                                                             |
|--------------------------------|-------------------------------------------------------------|
| Enclosure                      | OPEN                                                        |
| Frame                          | 143TC                                                       |
| Frame Material                 | Steel                                                       |
| Frequency                      | 60.00 Hz                                                    |
| Haz Area Class and Group       | None                                                        |
| Haz Area Division              | Not Applicable                                              |
| Motor Letter Type              | Three Phase                                                 |
| Output @ Frequency             | 1.000 HP @ 60 HZ                                            |
| Phase                          | 3                                                           |
| Synchronous Speed @ Frequency  | 1800 RPM @ 60 HZ                                            |
| Voltage @ Frequency            | 230.0 V @ 60 HZ<br>460.0 V @ 60 HZ                          |
| Agency Approvals               | CURUSEEV<br>NEMA PREMIUM                                    |
| Ambient Temperature            | 40 °C                                                       |
| Auxiliary Box                  | NO AUXILLARY BOX                                            |
| Auxiliary Box Lead Termination | None                                                        |
| Base Indicator                 | No Mounting                                                 |
| Bearing Grease Type            | Polyrex EM (-20F +300F)                                     |
| Blower                         | None                                                        |
| Current @ Voltage              | 1.600 A @ 460.0 V<br>3.200 A @ 208.0 V<br>3.200 A @ 230.0 V |
| Design Code                    | B                                                           |
| Drip Cover                     | No Drip Cover                                               |
| Duty Rating                    | CONT                                                        |
| Efficiency @ 100% Load         | 85.5 %                                                      |
| Electrically Isolated Bearing  | Not Electrically Isolated                                   |
| Feedback Device                | NO FEEDBACK                                                 |
| Front Shaft Indicator          | None                                                        |
| Heater Indicator               | No Heater                                                   |
| High Voltage Full Load Amps    | 1.6 a                                                       |

**Part Detail**

|              |            |
|--------------|------------|
| Revision     | H          |
| Type         | AC         |
| Mech. spec.  | 35Z413     |
| Base         |            |
| Status       | PRD/A      |
| Elec. spec.  | 35WGG004   |
| Layout       | 35LYZ413   |
| Eff. date    | 01-05-2026 |
| CD Diagram   | CD0005     |
| Poles        | 04         |
| Leads        | 9#18 Y     |
| Proprietary  | False      |
| Created date | 01-10-2022 |

|                                      |                            |
|--------------------------------------|----------------------------|
| <b>Insulation Class</b>              | <b>F</b>                   |
| <b>Inverter Code</b>                 | <b>Inverter Duty</b>       |
| <b>KVA Code</b>                      | <b>N</b>                   |
| <b>Lifting Lugs</b>                  | <b>No Lifting Lugs</b>     |
| <b>Locked Bearing Indicator</b>      | <b>Locked Bearing</b>      |
| <b>Motor Lead Quantity/Wire Size</b> | <b>9 @ 18 AWG</b>          |
| <b>Motor Lead Termination</b>        | <b>Flying Leads</b>        |
| <b>Motor Standards</b>               | <b>NEMA</b>                |
| <b>Motor Type</b>                    | <b>3520M</b>               |
| <b>Mounting Arrangement</b>          | <b>F1</b>                  |
| <b>Number of Poles</b>               | <b>4</b>                   |
| <b>Overall Length</b>                | <b>12.25 IN</b>            |
| <b>Power Factor</b>                  | <b>69</b>                  |
| <b>Product Family</b>                | <b>General Purpose</b>     |
| <b>Pulley End Bearing Type</b>       | <b>Ball</b>                |
| <b>Pulley Face Code</b>              | <b>C-Face</b>              |
| <b>Pulley Shaft Indicator</b>        | <b>Standard</b>            |
| <b>Rodent Screen</b>                 | <b>None</b>                |
| <b>Service Factor</b>                | <b>1.15</b>                |
| <b>Shaft Diameter</b>                | <b>0.875 IN</b>            |
| <b>Shaft Ground Indicator</b>        | <b>No Shaft Grounding</b>  |
| <b>Shaft Rotation</b>                | <b>Reversible</b>          |
| <b>Shaft Slinger Indicator</b>       | <b>No Slinger</b>          |
| <b>Speed</b>                         | <b>1770 rpm</b>            |
| <b>Speed Code</b>                    | <b>Single Speed</b>        |
| <b>Starting Method</b>               | <b>Direct on line</b>      |
| <b>Thermal Device - Bearing</b>      | <b>None</b>                |
| <b>Thermal Device - Winding</b>      | <b>None</b>                |
| <b>Vibration Sensor Indicator</b>    | <b>No Vibration Sensor</b> |
| <b>Winding Thermal 1</b>             | <b>None</b>                |
| <b>Winding Thermal 2</b>             | <b>None</b>                |

**Nameplate**

| NP3553LUA                        |                            |             |            |            |   |              |       |  |  |
|----------------------------------|----------------------------|-------------|------------|------------|---|--------------|-------|--|--|
| <b>CAT.NO.</b>                   | VEM3116T                   |             |            |            |   |              |       |  |  |
| <b>SPEC.</b>                     | 35Z413G004G1               |             |            |            |   |              |       |  |  |
| <b>HP</b>                        | 1                          |             |            |            |   |              |       |  |  |
| <b>VOLTS</b>                     | 230/460                    |             |            |            |   |              |       |  |  |
| <b>AMPS</b>                      | 3.2/1.6                    |             |            |            |   |              |       |  |  |
| <b>RPM</b>                       | 1770                       |             |            |            |   |              |       |  |  |
| <b>FRAME</b>                     | 143TC                      |             | <b>HZ</b>  | 60         |   | <b>PH</b>    | 3     |  |  |
| <b>SF</b>                        | 1.15                       | <b>CODE</b> | N          | <b>DES</b> | B | <b>CLASS</b> | F     |  |  |
| <b>NEMA NOM. EFF</b>             | 85.5                       | <b>PF</b>   | 69         |            |   |              |       |  |  |
| <b>RATING</b>                    | 40C AMB-CONT               |             |            |            |   |              |       |  |  |
| <b>CC</b>                        | 010A                       |             |            |            |   |              |       |  |  |
| <b>ENCL</b>                      | OPEN                       | <b>SN</b>   |            |            |   |              |       |  |  |
| <b>DE</b>                        | 6205                       |             | <b>ODE</b> | 6203       |   |              |       |  |  |
| <b>VPWM INVERTER READY</b>       |                            | SFA 3.4/1.7 |            |            |   |              |       |  |  |
| <b>CT30-60(2:1) VT3-60(20:1)</b> |                            |             |            |            |   |              |       |  |  |
| <b>USABLE AT</b>                 | 50HZ 1HP 190/380V 3.6/1.8A |             |            |            |   |              | SF1.0 |  |  |

**AC Induction Motor Performance Data**

Record # 91625

Typical performance - not guaranteed values

| Winding: 35WGG004-R001 |    |         | Type: 3520M                              |                     | Enclosure: TEFC         |            |          |
|------------------------|----|---------|------------------------------------------|---------------------|-------------------------|------------|----------|
| Nameplate Data         |    |         | 460 V, 60 Hz:<br>High Voltage Connection |                     |                         |            |          |
| Rated Output (HP)      |    | 1       | Full Load Torque                         |                     | 2.982 LB-FT             |            |          |
| Volts                  |    | 230/460 | Start Configuration                      |                     | direct on line          |            |          |
| Full Load Amps         |    | 3.2/1.6 | Breakdown Torque                         |                     | 14.6 LB-FT              |            |          |
| R.P.M.                 |    | 1770    | Pull-up Torque                           |                     | 7.57 LB-FT              |            |          |
| Hz                     | 60 | Phase   | 3                                        | Locked-rotor Torque |                         | 9.17 LB-FT |          |
| NEMA Design Code       |    | B       | KVA Code                                 | N                   | Starting Current        |            | 14.6 A   |
| Service Factor (S.F.)  |    | 1.15    | No-load Current                          |                     | 1.2 A                   |            |          |
| NEMA Nom. Eff.         |    | 85.5    | Power Factor                             | 69                  | Line-line Res. @ 25°C   |            | 16.049 Ω |
| Rating - Duty          |    | 40C     | AMB-CONT                                 |                     | Temp. Rise @ Rated Load |            | 36°C     |
| S.F. Amps              |    | 3.4/1.7 | Temp. Rise @ S.F. Load                   |                     | 41°C                    |            |          |
|                        |    |         | Locked-rotor Power Factor                |                     | 61.549                  |            |          |
|                        |    |         | Rotor inertia                            |                     | 0.144 lb-ft²            |            |          |

**Load Characteristics 460 V, 60 Hz, 1 HP**

| % of Rated Load | 25   | 50     | 75     | 100    | 125    | 150    | S.F. |
|-----------------|------|--------|--------|--------|--------|--------|------|
| Power Factor    | 29   | 45     | 58     | 67     | 73     | 78     | 71   |
| Efficiency      | 71.1 | 81.2   | 84.7   | 85.8   | 86     | 85.6   | 85.9 |
| Speed           | 1794 | 1787.3 | 1781.1 | 1774.3 | 1767.4 | 1759.4 | 1770 |
| Line amperes    | 1.22 | 1.31   | 1.46   | 1.64   | 1.86   | 2.11   | 1.77 |

ABB Motors and Mechanical Inc.

WINDING # 35WGG004

Typical performance - not guaranteed values.

1 HP 3 PH 60 HZ 1770 RPM 460 V 3520M

TORQUES (LB-FT): PO=14.6 PU=7.57 LR=9.17 LRA=14.6





