

# ABB BALDOR RELIANCE III

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## Customer information packet

IDVSM4104T

30HP, 1760RPM, 3PH, 60HZ, 286TC, 1056M, TEFC, F

Class - None

Division - Not Applicable

**Specifications**

|                                       |  |
|---------------------------------------|--|
| <b>Enclosure</b>                      | TEFC                                     |
| <b>Frame</b>                          | 286TC                                    |
| <b>Frame Material</b>                 | Iron                                     |
| <b>Frequency</b>                      | 60.00 Hz                                 |
| <b>Haz Area Class and Group</b>       | None                                     |
| <b>Haz Area Division</b>              | Not Applicable                           |
| <b>Motor Letter Type</b>              | Three Phase                              |
| <b>Output @ Frequency</b>             | 30.000 HP @ 60 HZ                        |
| <b>Phase</b>                          | 3  |
| <b>Synchronous Speed @ Frequency</b>  | 1800 RPM @ 60 HZ                         |
| <b>Voltage @ Frequency</b>            | 230.0 V @ 60 HZ<br>460.0 V @ 60 HZ       |
| <b>Agency Approvals</b>               | UR<br>CSA                                |
| <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>              | 38.000 A @ 460.0 V<br>76.000 A @ 230.0 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 Face Code</b>                | Standard                                 |
| <b>Front Shaft Indicator</b>          | Standard                                 |
| <b>Heater Indicator</b>               | No Heater                                |
| <b>High Voltage Full Load Amps</b>    | 38.0 a                                   |

**Part Detail**

|                     |            |
|---------------------|------------|
| <b>Revision</b>     | K          |
| <b>Type</b>         | AC         |
| <b>Mech. spec.</b>  | 10H810     |
| <b>Base</b>         |            |
| <b>Status</b>       | PRD/A      |
| <b>Elec. spec.</b>  | 10WGY538   |
| <b>Layout</b>       | 10LYH810   |
| <b>Eff. date</b>    | 06-05-2026 |
| <b>CD Diagram</b>   | CD0180     |
| <b>Poles</b>        | 04         |
| <b>Leads</b>        | 9#8        |
| <b>Proprietary</b>  | False      |
| <b>Created date</b> | 08-24-2017 |

|                                      |                            |
|--------------------------------------|----------------------------|
| <b>Insulation Class</b>              | F                          |
| <b>Inverter Code</b>                 | Inverter Duty              |
| <b>KVA Code</b>                      | J                          |
| <b>Lifting Lugs</b>                  | Standard Lifting Lugs      |
| <b>Locked Bearing Indicator</b>      | Locked Bearing             |
| <b>Max Speed</b>                     | 2700 rpm                   |
| <b>Motor Lead Exit</b>               | Ko Box                     |
| <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>                    | 1056M                      |
| <b>Mounting Arrangement</b>          | F1                         |
| <b>Number of Poles</b>               | 4                          |
| <b>Overall Length</b>                | 30.42 IN                   |
| <b>Power Factor</b>                  | 80                         |
| <b>Product Family</b>                | General Purpose            |
| <b>Pulley End Bearing Type</b>       | Ball                       |
| <b>Pulley Face Code</b>              | C-Face                     |
| <b>Pulley Shaft Indicator</b>        | Standard                   |
| <b>Rodent Screen</b>                 | None                       |
| <b>Service Factor</b>                | 1.00                       |
| <b>Shaft Diameter</b>                | 1.875 IN                   |
| <b>Shaft Extension Location</b>      | Double Shaft               |
| <b>Shaft Ground Indicator</b>        | No Shaft Grounding         |
| <b>Shaft Rotation</b>                | Reversible                 |
| <b>Shaft Slinger Indicator</b>       | Shaft Slinger              |
| <b>Speed</b>                         | 1760 rpm                   |
| <b>Speed Code</b>                    | Single Speed               |
| <b>Starting Method</b>               | Direct on line             |
| <b>Thermal Device - Bearing</b>      | NONE (OLD)                 |
| <b>Thermal Device - Winding</b>      | Normally Closed Thermostat |
| <b>Vibration Sensor Indicator</b>    | No Vibration Sensor        |
| <b>Winding Thermal 1</b>             | None                       |
| <b>Winding Thermal 2</b>             | None                       |

**Nameplate**

| <b>NP3302L</b>      |                               |
|---------------------|-------------------------------|
| <b>CAT NO</b>       | IDVSM4104T                    |
| <b>SPEC.</b>        | 10H810Y538G1                  |
| <b>FRAME</b>        | 286TC <b>HP</b> 30 TE         |
| <b>VOLTS</b>        | 230/460                       |
| <b>MAG CUR</b>      | 36/18 <b>FLA</b> 76/38        |
| <b>RPM</b>          | 1760 <b>RPM MAX</b> 2700      |
| <b>HZ</b>           | 60 <b>PH</b> 3 <b>CLASS</b> F |
| <b>SER.F.</b>       | 1.00 <b>SL HZ</b> 1.33        |
| <b>NEMA-NOM-EFF</b> | 93.6 <b>WK2</b> 4.46          |
| <b>RATING</b>       | 40C AMB-CONT                  |
| <b>DE BRG</b>       | 6311 <b>ODE BRG</b> 6309      |
| <b>CC</b>           | 010A <b>SN</b>                |
|                     | 1.5:1 CHP PWM                 |
|                     | 1000:1 CT, 1000:1 VT          |

|  |  |  |  |                           |  |  |  |                  |  |
|--|--|--|--|---------------------------|--|--|--|------------------|--|
| <b>ABB BALDOR/460</b><br><b>RELIANCE</b> |  | <b>CUSTOMER INFORMATION PACKET</b>                           |  | MAX SAFE RPM <b>2700</b>  |  | WYE CONN. EQ. CKT. OHMS PER PHASE (BASE RATING, 20C) |  |                  |  |
| HP AMPS <b>70/38</b>                     |  | IDVSM4104T - 30HP, 1760RPM, 3PH, 60HZ, 286TC, 1056M, TEFC, F |  | Base Volt <b>460</b>      |  | R1 <b>0.107</b>                                      |  | X1 <b>0.492</b>  |  |
| HP <b>30 HP</b>                          |  |  |  | NL AMPS <b>17.90</b>      |  | R2 <b>0.515</b>                                      |  | X2 <b>0.443</b>  |  |
| BASE SPEED <b>1777</b>                   |  |  |  | Slips(HZ) <b>0.78</b>     |  | R2B <b>0.075</b>                                     |  | X2B <b>0.692</b> |  |
| PHASE/HZ <b>3/60</b>                     |  |  |  | WK2 (LB-FT2) <b>4.470</b> |  | R2E <b>0.022</b>                                     |  | XM <b>12.800</b> |  |

### Rated Full Load Data

|            | RPM    | HP   | Torque | Volts | Freq-Hz | Amps |
|------------|--------|------|--------|-------|---------|------|
| Base Speed | 1776.5 | 30.0 | 88.7   | 460   | 60      | 37.6 |
| Max Speed  | 2664   | 30.0 | 59.1   | 460   | 90      | 33.4 |
| Min Speed  | 0      | 0.0  | 88.7   | 16.78 | 0.78    | 37.6 |

### Load Performance at Base Speed

|           | RPM    | HP   | Torque | Volts | Freq-Hz | Amps |
|-----------|--------|------|--------|-------|---------|------|
| No Load   | 1798.9 | 0.0  | 0.0    | 460   | 60      | 17.9 |
| 1/4       | 1792.2 | 7.5  | 22.1   | 460   | 60      | 19.8 |
| 1/2       | 1787.6 | 15.0 | 44.1   | 460   | 60      | 24.3 |
| 3/4       | 1782.4 | 22.5 | 66.2   | 460   | 60      | 30.7 |
| Full Load | 1776.5 | 30.0 | 88.7   | 460   | 60      | 37.6 |
| O/L       | 1749   | 60.0 | 180.0  | 460   | 60      | 73.0 |

| Blower Data | Volts | Ph/Hz | FL Amps | LR Amps | Frame | CFM |
|-------------|-------|-------|---------|---------|-------|-----|
|             |       |       |         |         |       |     |

Remarks: Calculated Data  
Vector PWM Inverter Duty



DR BY USBRRANI  
CK BY  
APP BY USBRRANI  
DATE 8/24/2017

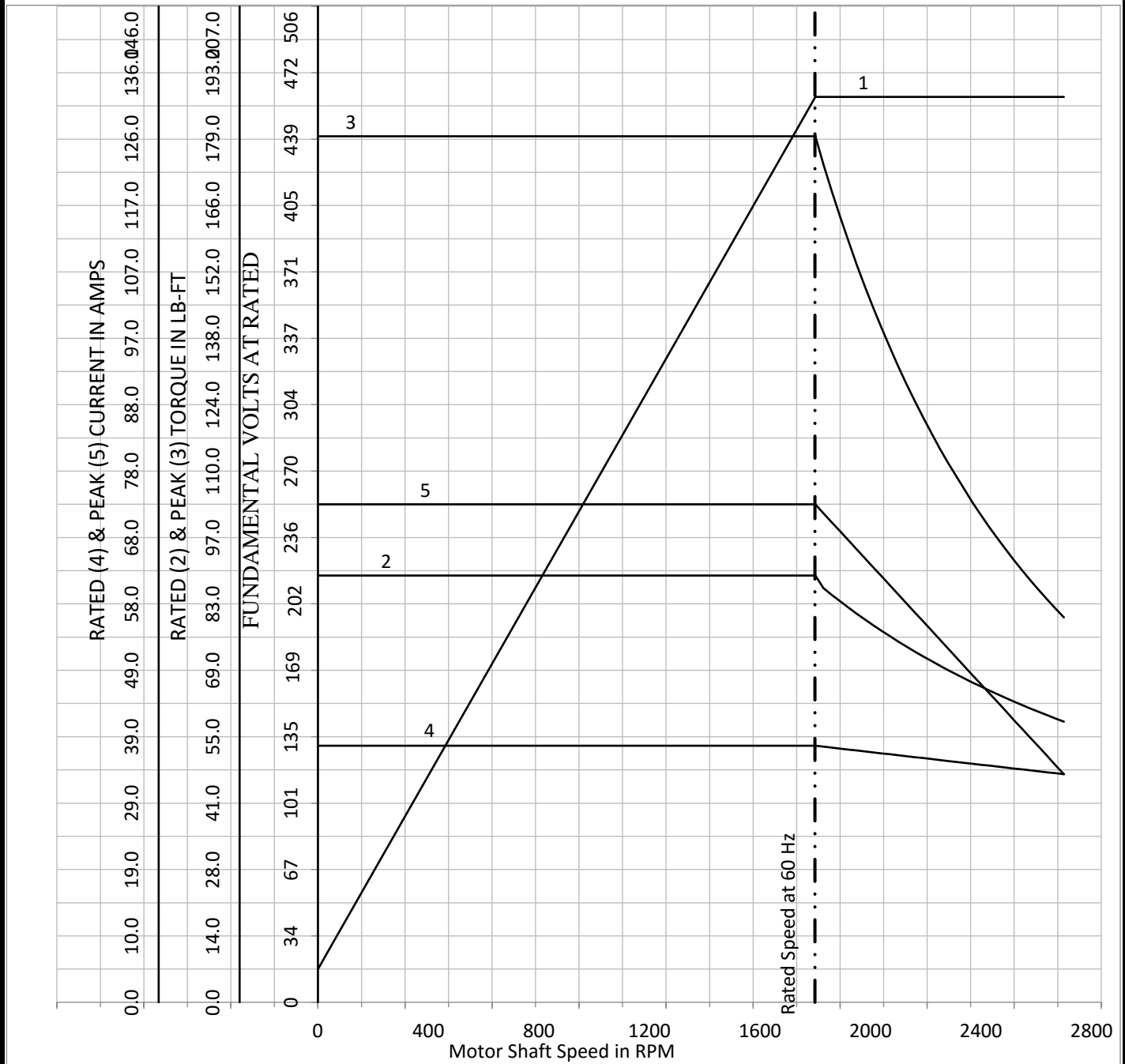
**A-C MOTOR PERFORMANCE CURVES**  
**10WGY538**  
Record: 52925

|                           |       |
|---------------------------|-------|
| MAX SAFE RPM              | 2700  |
| Base Volt                 | 460   |
| NL AMPS                   | 17.90 |
| Slips(HZ)                 | 0.78  |
| WK2 (LB-FT <sup>2</sup> ) | 4.470 |

|   |       |           |
|---|-------|-----------|
| WYE CONN EQ CKT OHMS PER PHASE (BASE RATING, 20C) |       |           |
| R1  | 0.107 | X1 0.492  |
| R2  | 0.515 | X2 0.443  |
| R2B   | 0.075 | X2B 0.692 |
| R2E   | 0.022 | XM 12.800 |

HP 30 HP  
BASE SPEED 1776.5  
PHASE/HZ 3/60

Vector PWM Inverter Duty  
Variable Speed AC Motor Curves



Calculated Data

Data Valid For Nameplate Speed Range only



DR BY USBRRAN1  
CK BY  
APP BY USBRRAN1  
DATE 8/24/2017

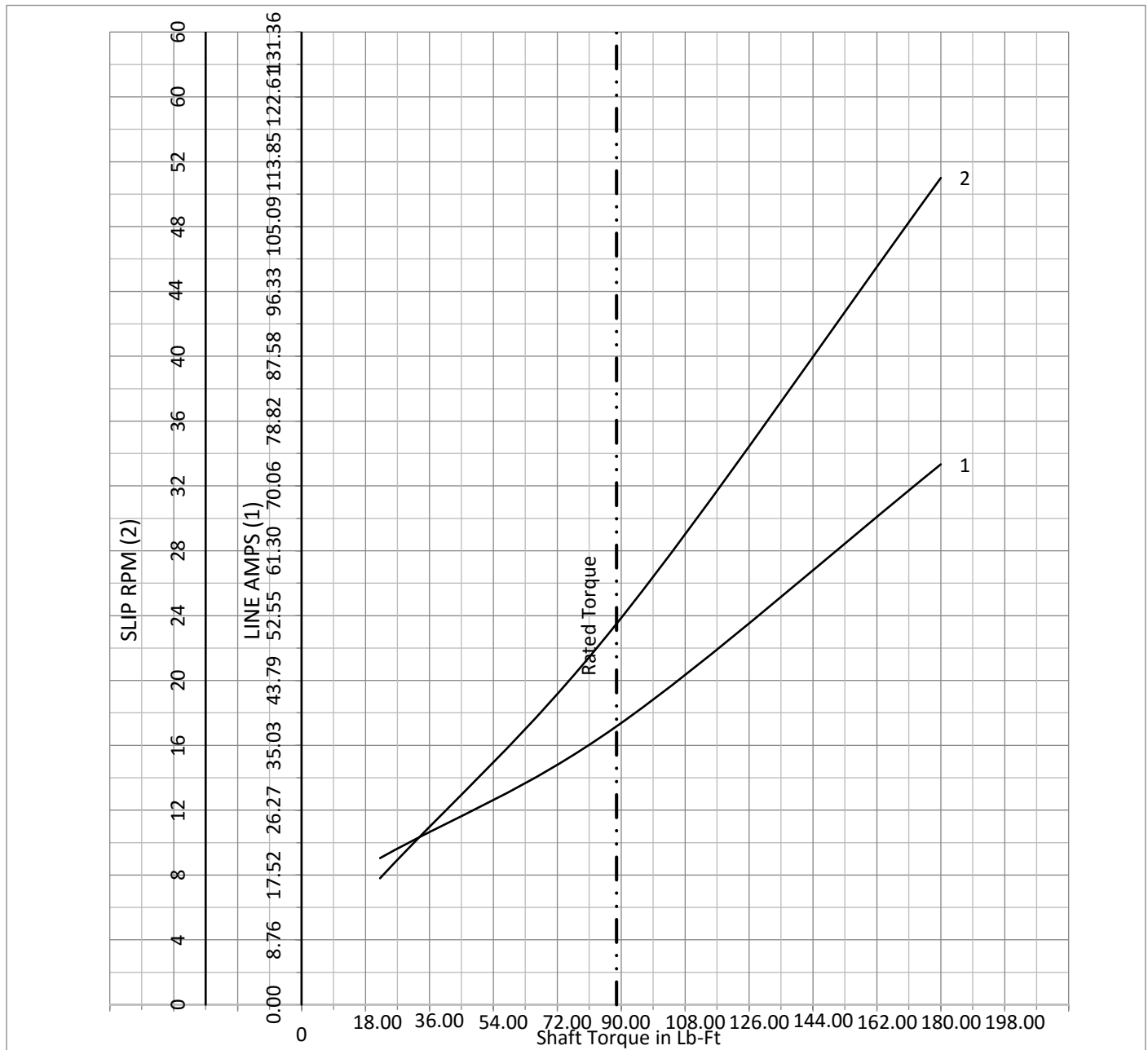
**A-C MOTOR PERFORMANCE CURVES**  
**10WGY538**  
Record: 52925

|              |       |
|--------------|-------|
| MAX SAFE RPM | 2700  |
| Base Volt    | 460   |
| NL AMPS      | 17.90 |
| Slips(HZ)    | 0.78  |
| WK2 (LB-FT2) | 4.470 |

|   |       |     |        |
|---|-------|-----|--------|
| WYE CONN EQ CKT OHMS PER PHASE (BASE RATING, 20C) |       |     |        |
| R1  | 0.107 | X1  | 0.492  |
| R2  | 0.515 | X2  | 0.443  |
| R2B   | 0.075 | X2B | 0.692  |
| R2E   | 0.022 | XM  | 12.800 |

HP 30 HP  
 BASE SPEED 1776.5  
 PHASE/HZ 3/60

Vector PWM Inverter Duty  
 Variable Speed AC Motor Curves

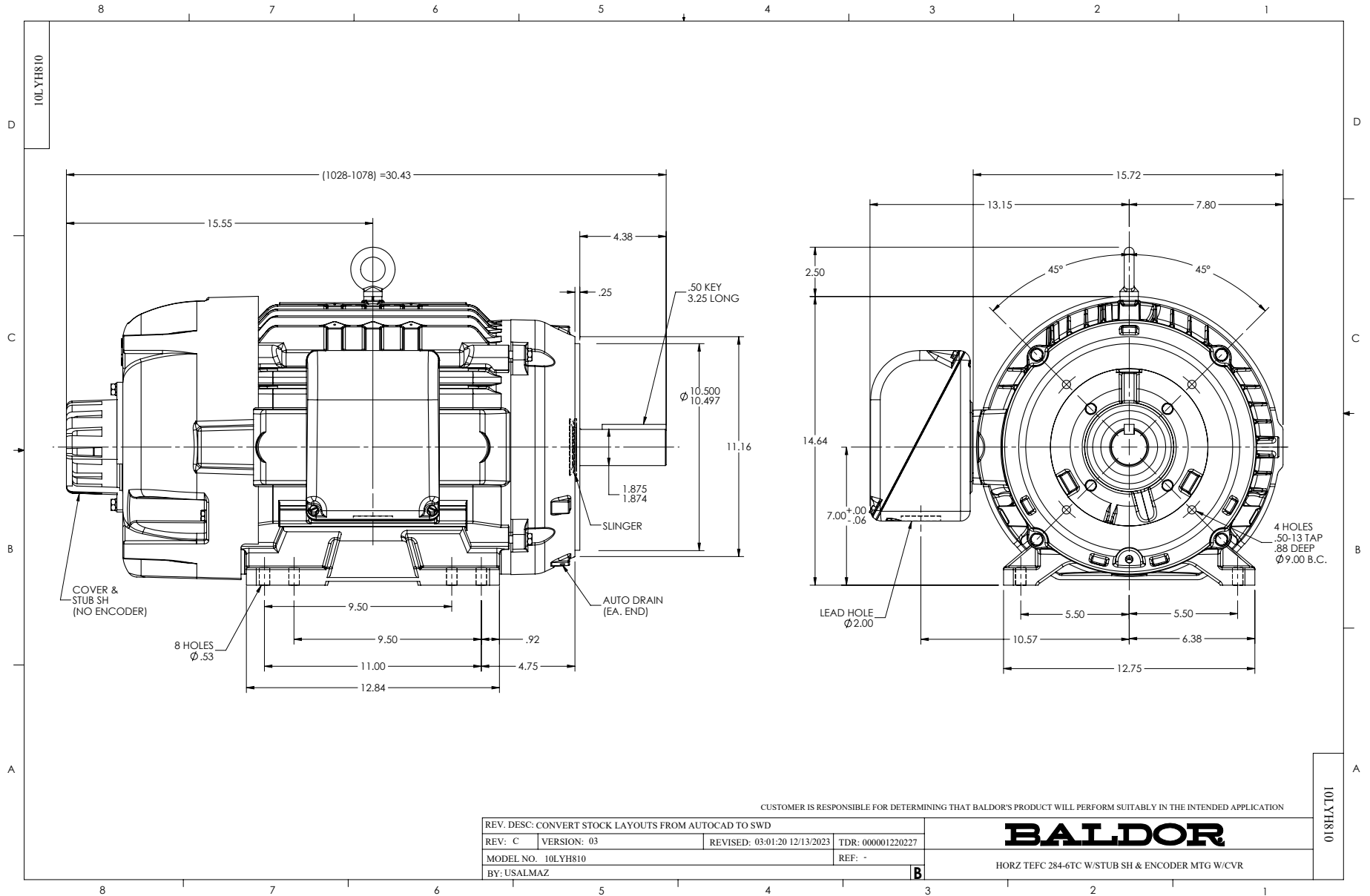


Calculated Data  
 Data Valid For Nameplate Speed Range only



DR BY USBRRAN1  
 CK BY  
 APP BY USBRRAN1  
 DATE 8/24/2017

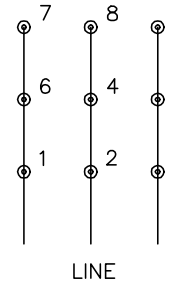
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**PERFORMANCE**  
**CURVES**  
**10WGY538**  
 Record: 52925



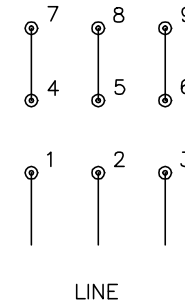
CD0180



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.

CD0180

|                                   |                                |                   |
|-----------------------------------|--------------------------------|-------------------|
| 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