

# PRODUCT INFORMATION PACKET

Model No: LM21233

Catalog No: LM21233

Speed Ratio Motors, TEFC, 150 HP, 3 Ph, 60 Hz, 460 V, 1787 RPM, 445T Frame



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### Nameplate Specifications

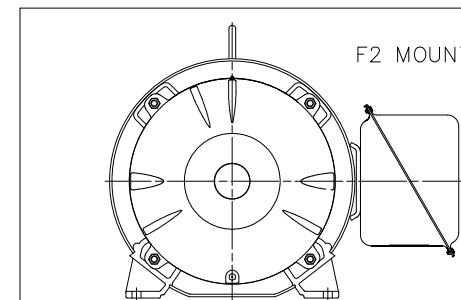
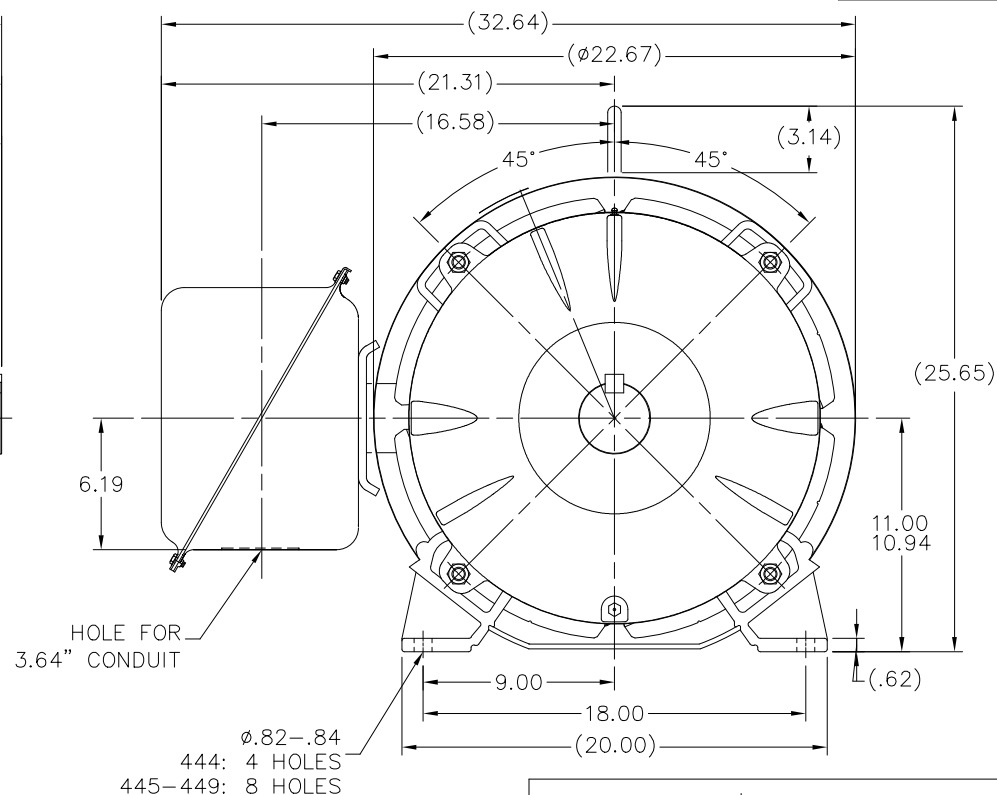
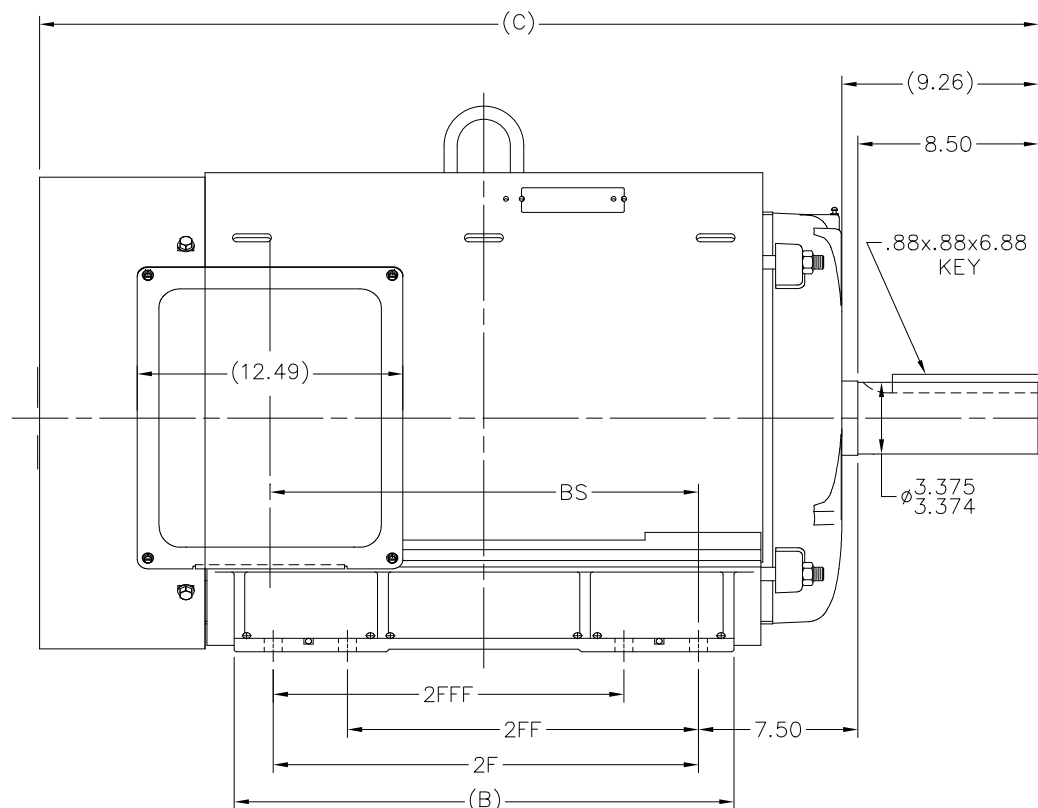
|                        |               |                            |                             |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP              | 150 Hp        | Output KW                  | 112.0 kW                    |
| Frequency              | 60 Hz         | Voltage                    | 460 V                       |
| Current                | 168.0 A       | Speed                      | 1787 rpm                    |
| Service Factor         | 1             | Phase                      | 3                           |
| Efficiency             | 95 %          | Power Factor               | 88                          |
| Duty                   | Continuous    | Insulation Class           | F                           |
| Design Code            | INV           | KVA Code                   | J                           |
| Frame                  | 445T          | Enclosure                  | Totally Enclosed Fan Cooled |
| Thermal Protection     | No Protection | Ambient Temperature        | 40 °C                       |
| Drive End Bearing Size | 318           | Opp Drive End Bearing Size | 315                         |
| UL                     | Recognized    | CSA                        | Y                           |
| CE                     | Y             | IP Code                    | 43                          |
| Number of Speeds       | 1             |                            |                             |

### Technical Specifications

|                       |                             |                       |               |
|-----------------------|-----------------------------|-----------------------|---------------|
| Electrical Type       | Squirrel Cage Inverter Duty | Starting Method       | Inverter Only |
| Poles                 | 4                           | Rotation              | Reversible    |
| Resistance Main       | .031 Ohms                   | Mounting              | Rigid Base    |
| Motor Orientation     | Horizontal                  | Drive End Bearing     | Ball          |
| Opp Drive End Bearing | Ball                        | Frame Material        | Rolled Steel  |
| Shaft Type            | T                           | Overall Length        | 43.58 in      |
| Frame Length          | 23.17 in                    | Shaft Diameter        | 3.375 in      |
| Shaft Extension       | 8.5 in                      | Assembly/Box Mounting | F1/F2 CAPABLE |
| Connection Drawing    | EE7340D-LN                  | Outline Drawing       | XK2F1SS1-2317 |

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XK2F1SS1



NOTES:

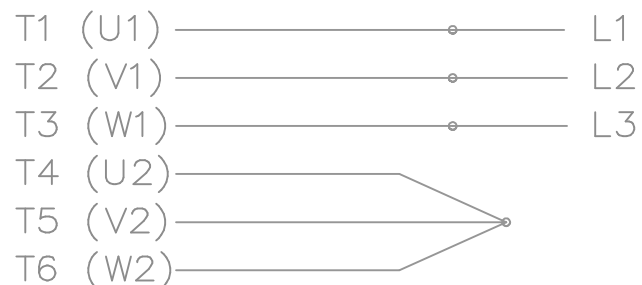
1. CONDUIT BOX CAN BE ROTATED IN 90° STEPS.
2. NAMEPLATES TO BE READ FROM CONDUIT BOX SIDE OF MOTOR.

|      |      |       |    |       |       |       |       |       | TOLERANCES UNLESS SPECIFIED |                   |        | DRAWN MSG 09-19-2001                       |      |                          |
|------|------|-------|----|-------|-------|-------|-------|-------|-----------------------------|-------------------|--------|--------------------------------------------|------|--------------------------|
|      |      |       |    |       |       |       |       |       | DEC.                        | INCHES            |        | CHK                                        | ML   | 09-21-2001               |
|      |      |       |    |       |       |       |       |       | .X                          | ±.1               |        | APPD                                       | HNH  | 09-24-2001               |
| 2117 | 444T | 41.58 | -- | 18.00 | 14.50 |       |       |       | .XX                         | ±.03              |        | TITLE OUTLINE NEMA MOTORS<br>440T TEFC UEI |      |                          |
| 2317 | 445T | 43.58 | -- | 20.00 | 16.50 | 14.50 | 14.50 | 16.64 | .XXX                        | ±.005             |        |                                            |      |                          |
| 2667 | 447T | 47.08 | -- | 23.50 | 20.00 | 16.50 | 16.50 | 20.14 | .XXXX                       | ±.0005            | MAT'L  | SCALE 1=6                                  |      |                          |
| 3167 | 449T | 52.08 | -- | 28.50 | 25.00 | 20.00 | 20.00 | 25.14 | ANG                         | ±7°30'            | FINISH | REF                                        |      |                          |
|      |      |       |    |       |       |       |       |       | RFP                         | CAD FILE xk2f1ss1 |        |                                            | SIZE | DRAWING NO. PAGE OF REV. |
|      |      |       |    |       |       |       |       |       | DIST                        | BY                |        |                                            | B    | XK2F1SS1 8               |

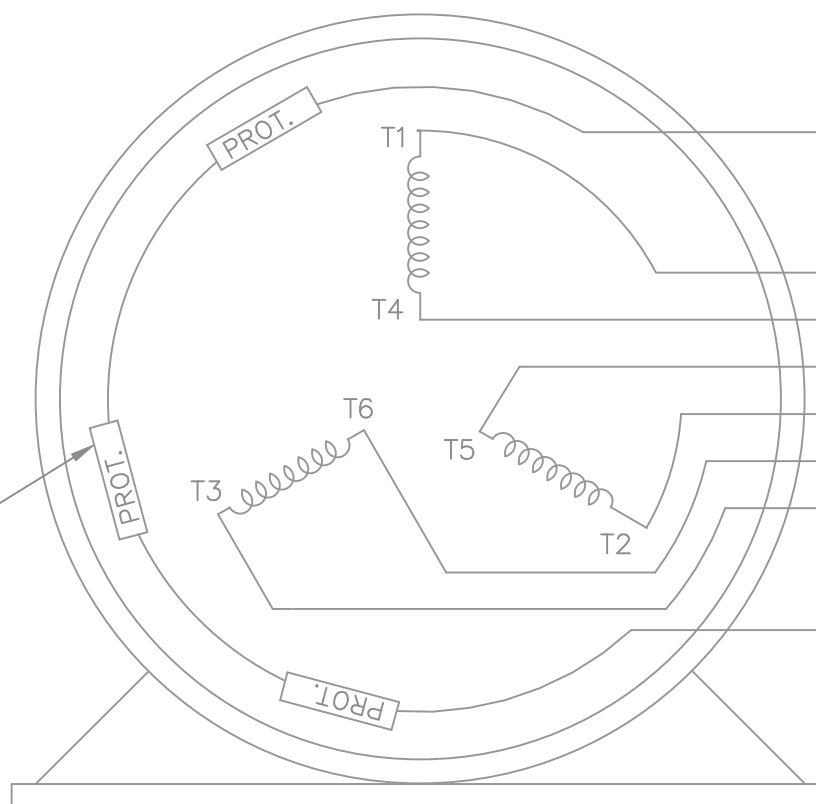
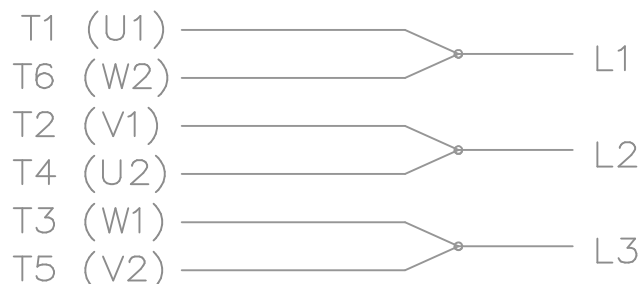
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THREE PHASE  
WYE START DELTA RUN

START

THERMO-PROTECTORS  
CONNECTED IN SERIES

RUN



VIEW OF TERMINAL END

P1 (1T1)

T1 (U1)

T4 (U2)

T5 (V2)

T2 (V1)

T6 (W2)

T3 (W1)

P2 (1T2)

NOTE:

IEC LEAD MARKINGS ARE NOTED IN PARANTHESES

|                                                                                                                                                                                                                                  |                         |                | TOLERANCES<br>UNLESS SPECIFIED |              |  | DRAWN KL 11-10-2000 |                        |             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------|--------------------------------|--------------|---------------------------------------------------------------------------------------|---------------------|------------------------|-------------|
|                                                                                                                                                                                                                                  |                         |                | DEC.                           | INCHES       |                                                                                       | CHK DJK 11-10-2000  |                        |             |
|                                                                                                                                                                                                                                  |                         |                | .X                             | ±.1          |                                                                                       | APPD DJK 11-10-2000 |                        |             |
|                                                                                                                                                                                                                                  |                         |                | .XX                            | ±.02         |                                                                                       | SCALE 1=1           |                        |             |
| 2                                                                                                                                                                                                                                | ADDED IEC LEAD MARKINGS | MSG 10-08-2008 | ML                             | .XXX ±.005   | TITLE CONNECTION DIAGRAM – EXTERNAL – 3ø<br>WYE START DELTA RUN – SINGLE VOLTAGE      | REF                 |                        |             |
| 1                                                                                                                                                                                                                                | NEW DRAWING MU34618     | KL 11-10-2000  | DJK                            | .XXXX ±.0005 |                                                                                       | FMF                 |                        |             |
| NO.                                                                                                                                                                                                                              | REVISION                | BY & DATE      | CHK                            | ANG ±7'30"   | FINISH                                                                                | PREV                |                        |             |
| THIS DRAWING IN DESIGN AND DETAIL IS OUR PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH OUR WORK ALL RIGHTS OF DESIGN AND INVENTION ARE RESERVED THIS IS AN ELECTRONICALLY GENERATED DOCUMENT – DO NOT SCALE THIS PRINT |                         |                | RFP                            | 11-10-2000   | CAD FILE EE7340D_LN                                                                   | SIZE A              | DRAWING NO. EE7340D_LN | PAGE 2 OF 6 |
|                                                                                                                                                                                                                                  |                         |                | DIST                           |              |                                                                                       |                     |                        |             |



1051 CHEYENNE AVE.  
GRAFTON, WI 53024  
PH. 262-277-8810

DATA VOLTS: 460

### CERTIFICATION DATA SHEET

CONN. DIAGRAM: EE7340D-LN

CAT #: LM21233

OUTLINE: XK2F1SS1-2317

WINDING: C4454022

NONE 1

### TYPICAL MOTOR PERFORMANCE DATA

| HP  | KW  | SYNC RPM | FL RPM | FRAME | ENCLOSURE | TYPE | KVA CODE | DESIGN |
|-----|-----|----------|--------|-------|-----------|------|----------|--------|
| 150 | 112 | 1800     | 1787   | 445T  | TEFC      | TFR  | J        | INC    |

| PH | HZ | VOLTS | AMPS | START TYPE    | DUTY | INSL | S.F. | AMB | ELEV. |
|----|----|-------|------|---------------|------|------|------|-----|-------|
| 3  | 60 | 460   | 168  | INVERTER ONLY | CONT | F    | 1.15 | 40  | 3300  |

| F.L. EFF | 95.0 | 3/4 LD EFF | 94.5 | 1/2 LD EFF | 93.6 | GTD EFF |  | ELECT. TYPE      |  |
|----------|------|------------|------|------------|------|---------|--|------------------|--|
| F.L. PF  | 88.0 | 3/4 LD PF  | 85.0 | 1/2 LD PF  | 77.5 | 94.1    |  | SQ CAGE INV DUTY |  |

| F.L. TORQUE | LR AMPS @ 460 V | L.R. TORQUE    | B.D. TORQUE      | F.L. RISE (° C) |
|-------------|-----------------|----------------|------------------|-----------------|
| 441 LB-FT   | 1,450           | 600 LB-FT 136% | 1,400 LB-FT 317% | 55              |

| PRESSURE @ 3 | SOUND    | POWER | ROTOR WK²   | MAX. LOAD WK² | SAFE STALL TIME | STARTS/HOUR | MOTOR WGT |
|--------------|----------|-------|-------------|---------------|-----------------|-------------|-----------|
| 999 dBA      | 1008 dBA |       | 0.00 LB-FT² | 0 LB-FT²      | 0 SEC.          | 0           | 0 LB.     |

\*\*\* SUPPLEMENTAL INFORMATION \*\*\*

| DE BRACKET TYPE | ODE BRACKET TYPE | MOUNT TYPE | MOTOR ORIENTATION | SEVERE DUTY | HAZARDOUS LOCATION | DRIP COVER | SCREENS | PAINT     |
|-----------------|------------------|------------|-------------------|-------------|--------------------|------------|---------|-----------|
| STANDARD        | STANDARD         | RIGID      | HORIZONTAL        | NO          | NONE               | NO         | NONE    | WATTSaver |

| BEARINGS  | GREASE     | SHAFT TYPE | SPECIAL DE | SPECIAL ODE | SHAFT MATERIAL          | FRAME MATERIAL |
|-----------|------------|------------|------------|-------------|-------------------------|----------------|
| DE ODE    |            |            |            |             |                         |                |
| BALL BALL | POLYREX EM | T          | NONE       | NONE        | 1045 HOT ROLLED (C-204) | ROLLED STEEL   |
| 318 315   |            |            |            |             |                         |                |

| THERMOSTATS  | PROTECTORS | WDG RTD's | BRG RTD's | THERMISTORS | CONTROL | SPACE HEATERS |
|--------------|------------|-----------|-----------|-------------|---------|---------------|
| TSTATS (N/C) | NOT        | NONE      | NONE      | NONE        | FALSE   | NA            |

| R1 (ohms/ph) | R2 (ohms/ph) | X1 (ohms/ph) | X2 (ohms/ph) | Xm (ohms/ph) | VIBRATION (in/sec) | FLOAT |
|--------------|--------------|--------------|--------------|--------------|--------------------|-------|
| 0.023        | 0.009        | 0.157        | 0.127        | 4.971        | 0.150              | ODE   |

|                                 |  |  |                               |
|---------------------------------|--|--|-------------------------------|
| *<br>N<br>O<br>T<br>E<br>S<br>* |  |  | INVERTER TORQUE: CONSTANT 4:1 |
|                                 |  |  | INV. HP SPEED RANGE: NONE     |
|                                 |  |  | ENCODER: NONE                 |
|                                 |  |  | NONE                          |
|                                 |  |  | NONE PPR                      |

|                 |                   |  |
|-----------------|-------------------|--|
| DATE: 9/10/2018 | BRAKE: NONE       |  |
|                 | NONE NONE         |  |
|                 | FT-LB: NA         |  |
|                 | VOLTAGE: NONE HZ: |  |

UL: V-OVER TEMP PROT 3, P1-P2

## Data Sheet

Date: 9/10/2018

LM21233



Data @ 460 V

## Motor Load Data

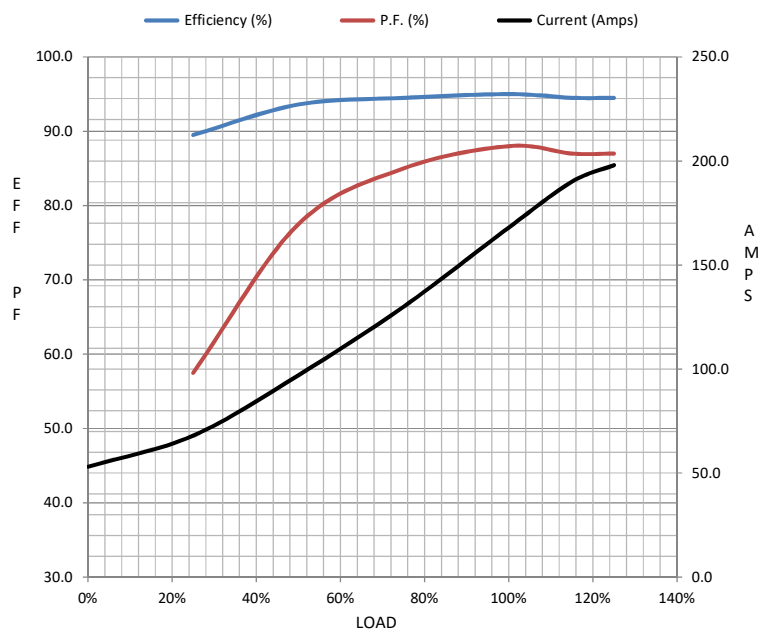
| Load           | 0%   | 25%  | 50%  | 75%  | 100% | 115%  | 125% | LR    |  |
|----------------|------|------|------|------|------|-------|------|-------|--|
| Current (Amps) | 53.0 | 68.0 | 97.0 | 130  | 168  | 190   | 198  | 1,450 |  |
| Torque (ft-lb) | 0.00 | 110  | 220  | 330  | 441  | 507   | 551  | 600   |  |
| RPM            | 1800 | 1797 | 1795 | 1792 | 1787 | 1,786 | 1785 | 0     |  |
| Efficiency (%) |      | 89.5 | 93.6 | 94.5 | 95.0 | 94.5  | 94.5 |       |  |
| P.F. (%)       | 6.5  | 57.5 | 77.5 | 85.0 | 88.0 | 87.0  | 87.0 | 21.5  |  |

## Motor Speed Data

|                | LR    | Pull-Up | BD    | Rated | Idle |
|----------------|-------|---------|-------|-------|------|
| Speed (RPM)    | 0     | 900     | 1715  | 1787  | 1800 |
| Current (Amps) | 1,450 | 1,300   | 950   | 168   | 53.0 |
| Torque (ft-lb) | 600   | 540     | 1,400 | 441   | 0.00 |

## Information Block

|                            |               |        |        |        |
|----------------------------|---------------|--------|--------|--------|
| HP                         | 150.0         |        |        |        |
| Sync. RPM                  | 1800          |        |        |        |
| Frame                      | 445           |        |        |        |
| Enclosure                  | TEFC          |        |        |        |
| Construction               | TFR           |        |        |        |
| Voltage                    | 460 V         |        |        |        |
| Frequency                  | 60 Hz         |        |        |        |
| Design                     | A             |        |        |        |
| LR Code letter             | J             |        |        |        |
| Service Factor             | 1.0           |        |        |        |
| Temp Rise @ FL             | 55 ° C        |        |        |        |
| Duty                       | CONT          |        |        |        |
| Ambient                    | 40 ° C        |        |        |        |
| Elevation                  | 1,000 feet    |        |        |        |
| Rotor/Shaft wk²            | 0.00 Lb-Ft²   |        |        |        |
| Ref Wdg                    | C4454022 NONE |        |        |        |
| Sound Pressure @ 1M        | 999 dBA       |        |        |        |
| VFD Rating                 | CONSTANT 4:1  |        |        |        |
| Outline Dwg                | XK2F1SS1-2317 |        |        |        |
| Conn. Diag                 | EE7340D-LN    |        |        |        |
| Additional Specifications: |               |        |        |        |
| 0                          |               |        |        |        |
| 0                          |               |        |        |        |
| EQUIV CKT (OHMS / PHASE)   |               |        |        |        |
| R1                         | R2            | X1     | X2     | Xm     |
| 0.0230                     | 0.0090        | 0.1570 | 0.1270 | 4.9710 |



## Speed - Torque Curve

