NIDEC MOTOR CORPORATION
8050 WEST FLORISSANT AVE.
ST. LOUIS, MO 63136

DATE: 8/27/2014

P.O. NO.: CW86
Order/Line NO.: 20544 MN 100

TO:

Model Number: CW86
Catalog Number:
Horiz. XP Premium Eff. Config.
CONF,MOTOR,HORIZ XP PRE EFF

REVISIONS:
(NONE)

ALL DOCUMENTS HEREIN ARE CONSIDERED CERTIFIED BY NIDEC MOTOR CORPORATION.
THANK YOU FOR YOUR ORDER AND THE OPPORTUNITY TO SERVE YOU.

Features:

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Horsepower ..............  00075.00 ~ KW: 55.95
Enclosure ...............  TEFC
Poles ...................  04 ~ RPM: 1800
Frame Size ..............  365~T
Phase/Frequency/Voltage..  3~060~230/460 ~ Random Wound
Service Factor ..........  1.15
Insulation Class ........  Class "F" ~ Insulife 2000
Altitude In Feet (Max) ..  3300 Ft.(1000 M)
Ambient In Degree C (Max)  +40 C
Assembly Position .......  "F-1" Assembly Position
Efficiency Class ........  Premium Efficiency
Application .............  Unknown
Customer Part Number ....
Hazardous Location Info:
Division 1 ~ Class I ~ Group D
Class II N/A ~ Group N/A ~ T2B Temp Code
"AK" Dimension (Inches).. NA
Temperature Rise (Sine Wave): "B" Rise @ 1.0 SF (Resist)
Starting Method .........  Standard Value For Rating
Duty Cycle ..............  Continuous Duty
Efficiency Value ........  95.4 % ~ NEMA Nominal
Load Inertia (lb-ft2): NEMA ~ NEMA Inertia: 338.00 ~ 1.00
Number Of Starts Per Hour: NEMA
Motor Type Code .........  LCE
Rotor Inertia (LB-FT²)        15.8 LB-FT²
Qty. of Bearings PE (Shaft)   1
Qty. of Bearings SE (OPP)     1
Bearing Number PE (Shaft)     6313-J/C3
Bearing Number SE (OPP)       6212-J/C3
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Accessories:
Corro-Duty
.
Standard Leadtime: REFER TO OFFICE
Est. Weight (lbs ea): 875 ~ F.O.B.: St. Louis, MO

USE THE DATA PROVIDED BELOW TO SELECT THE APPROPRIATE DIMENSION PRINT

Horsepower	75
Pole(s)	04
Voltage(s)	460-230
Frame Size	365T
Shaft U Diameter	2.375
Outlet Box AF	4.56
Outlet Box AA	3.00

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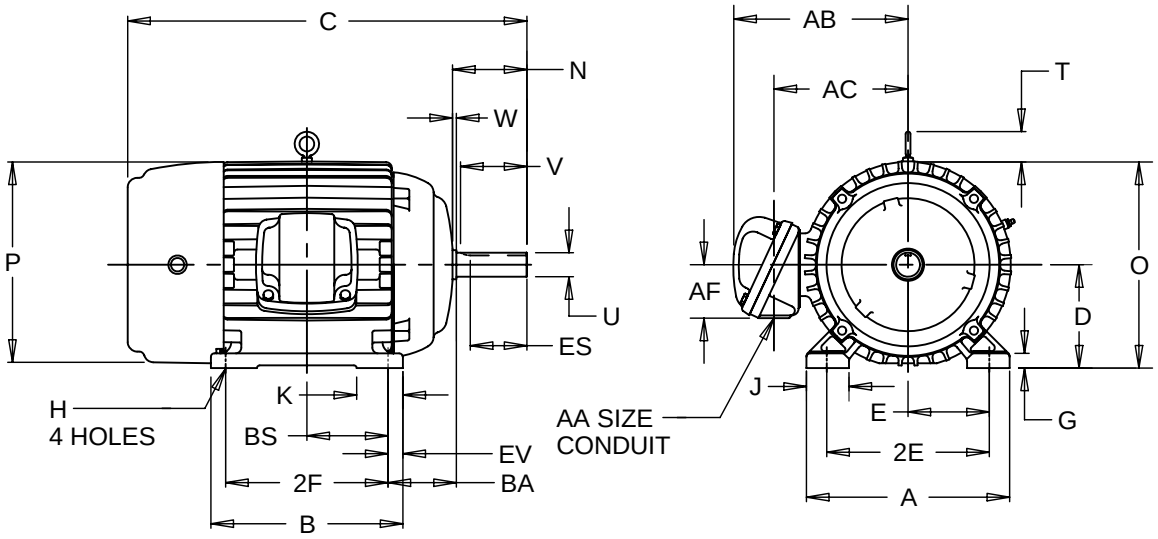
EFFECTIVE: 04-APR-11	HORIZONTAL MOTORS TEFC - EXPLOSION PROOF FRAME: 364, 365T BASIC TYPE: LC, NC	PRINT: 07-2732
SUPERSEDES: 20-OCT-08		SHEET: 1 OF 1



ALL DIMENSIONS ARE IN INCHES AND MILLIMETERS

	UNITS	A	B	C	D -.06	E	2E ±.03	G	H +.05	J	K	N
	IN	17.75	15.25	33.06	9.00	7.00	14.00	1.25	.66	3.75	4.38	6.31
	MM	451	387	840	229	178	356	32	17	95	111	160

	UNITS	O	P [2]	T	U -.001	V MIN	W	AA	AB	AC	AF	BA
	IN	18.28	18.56	2.50	2.375	5.63	.44	3.00 NPT	17.53	12.50	4.56	5.88
	MM	464	472	64	60.33	143	11		445	318	116	149

	UNITS	BS	ES MIN	EV	SQ KEY
	IN	6.13	4.28	1.50	.625
	MM	156	109	38	15.88

	FRAME	UNITS	2F ±.03
	364T	IN	11.25
		MM	286
	365T	IN	12.25
		MM	311

1: ALL ROUGH CASTING DIMENSIONS MAY VARY BY .25" DUE TO CASTING AND/OR FABRICATION VARIATIONS.
2: LARGEST MOTOR WIDTH.
3: TOLERANCES SHOWN ARE IN INCHES ONLY.

4: STANDARD ASSEMBLY POSITION F-1 IS SHOWN F-2 IS PROVIDED WHEN SPECIFIED. CONDUIT OPENINGS MAY BE LOCATED IN STEPS OF 90 DEGREES REGARDLESS OF LOCATION. STANDARD AS SHOWN WITH CONDUIT OPENING DOWN.

Nidec Motor Corporation
St. Louis, Missouri

INFORMATION DISCLOSED ON THIS DOCUMENT IS CONSIDERED PROPRIETARY AND SHALL NOT BE REPRODUCED OR DISCLOSED WITHOUT WRITTEN CONSENT OF NIDEC MOTOR CORPORATION

ISSUED BY	ECO 46275-00
R. KING	
APPROVED BY	
K. POTTER	

IHP_DP_NMCA (MAR-2011) SOLIDEDGE

NAMEPLATE DATA

CATALOG NUMBER:				NAMEPLATE PART #:	2022000-002		
MODEL	CW86	FR	365T	TYPE	LCE	ENCL	TEFC
SHAFT END BRG	6313-J/C3 - QTY 1			OPP END BRG	6212-J/C3 - QTY 1		
PH	3	MAX AMB	40 C	ID#			
INSUL CLASS	F	Asm. Pos.	F1	DUTY	CONT		

HP	75		RPM	1785		HP		RPM	
VOLTS	460	230				VOLTS			
FL AMPS	84.0	169.0				FL AMPS			
SF AMPS	98.0	196.0				SF AMPS			
SF	1.15	DESIGN	B	CODE	G	SF		DESIGN	CODE
NEMA NOM EFFICIENCY	95.4	NOM PF	87.2	KiloWatt	55.950	NEMA NOM EFFICIENCY		NOM PF	
GUARANTEED EFFICIENCY	94.5	MAX KVAR	14.4	HZ	60	GUARANTEED EFFICIENCY		MAX KVAR	HZ

HAZARDOUS LOCATION DATA (IF APPLICABLE):

DIVISION	1	CLASS I	I	GROUP I	D
TEMP CODE	T2B	CLASS II		GROUP II	

VFD DATA (IF APPLICABLE):

VOLTS			
AMPS			
TORQUE 1		TORQUE 2	
VFD LOAD TYPE 1		VFD LOAD TYPE 2	
VFD HERTZ RANGE 1		VFD HERTZ RANGE 2	
VFD SPEED RANGE 1		VFD SPEED RANGE 2	
SERVICE FACTOR		FL SLIP	
NO. POLES	4	MAGNETIZING AMPS	21.3
VECTOR MAX RPM		Encoder PPR	
Radians / Seconds	1	Encoder Volts	

TEAO DATA (IF APPLICABLE):

HP (AIR OVER)		HP (AIR OVER M/S)		RPM (AIR OVER)		RPM (AIR OVER M/S)	
FPM AIR VELOCITY		FPM AIR VELOCITY M/S		FPM AIR VELOCITY SEC			

ADDITIONAL NAMEPLATE DATA:

Decal / Plate	WD=159833	Customer PN	
Notes		Non Rev Ratchet	
Max Temp Rise	80C RISE/RES@1.00SF	OPP/Upper Oil Cap	GREASE
Thermal (WDG)		SHAFT/Lower Oil Cap	GREASE
Altitude			
Regulatory Notes		Regulatory Compliance	
COS		Marine Duty	
Balance		Arctic Duty	
3/4 Load Eff.	95.9	Inrush Limit	
Motor Weight (LBS)	875	Direction of Rotation	
Sound Level		Special Note 1	
Vertical Thrust (LBS)		Special Note 2	
Thrust Percentage		Special Note 3	
Bearing Life		Special Note 4	
Starting Method		Special Note 5	
Number of Starts		Special Note 6	
200/208V 60Hz Max Amps		SH Max. Temp.	
190V 50 hz Max Amps		SH Voltage	
380V 50 Hz Max Amps		SH Watts	
NEMA Inertia		Load Inertia	
Sumpheater Voltage		Sumpheater Wattage	
Special Accessory Note 1		Special Accessory Note 16	
Special Accessory Note 2		Special Accessory Note 17	
Special Accessory Note 3		Special Accessory Note 18	
Special Accessory Note 4		Special Accessory Note 19	
Special Accessory Note 5		Special Accessory Note 20	
Special Accessory Note 6		Special Accessory Note 21	
Special Accessory Note 7		Special Accessory Note 22	
Special Accessory Note 8		Special Accessory Note 23	
Special Accessory Note 9		Special Accessory Note 24	
Special Accessory Note 10		Special Accessory Note 25	
Special Accessory Note 11		Special Accessory Note 26	
Special Accessory Note 12		Special Accessory Note 27	
Special Accessory Note 13		Special Accessory Note 28	
Special Accessory Note 14		Special Accessory Note 29	
Special Accessory Note 15		Special Accessory Note 30	

NIDEC MOTOR CORPORATION

ST. LOUIS, MO

TYPICAL NAMEPLATE DATA
ACTUAL MOTOR NAMEPLATE LAYOUT MAY VARY
SOME FIELDS MAY BE OMITTED

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MOTOR PERFORMANCE

MODEL NO.	CATALOG NO.	PHASE	TYPE	FRAME
CW86	NA	3	LCE	365T

ORDER NO.	20544	LINE NO.	

MPI:	121843	121844
HP:	75	75
POLES:	4	4
VOLTS:	460	230
HZ:	60	60
SERVICE FACTOR:	1.15	1.15
EFFICIENCY (%):		
S.F.	94.8	94.8
FULL	95.4	95.4
3/4	95.9	95.9
1/2	95.7	95.7
1/4	93.6	93.6
POWER FACTOR (%):		
S.F.	87.1	87.1
FULL	87.2	87.2
3/4	86.1	86.1
1/2	81.2	81.2
1/4	64	64
NO LOAD	4.7	4.7
LOCKED ROTOR	32.4	32.4
AMPS:		
S.F.	98	196
FULL	84	169
3/4	64	128
1/2	45	90
1/4	29.3	59
NO LOAD	21.3	42.5
LOCKED ROTOR	523.3	1047.5
NEMA CODE LETTER	G	G
NEMA DESIGN LETTER	B	B
FULL LOAD RPM	1785	1785
NEMA NOMINAL EFFICIENCY (%)	95.4	95.4
GUARANTEED EFFICIENCY (%)	94.5	94.5
MAX KVAR	14.4	14.4
AMBIENT (°C)	40	40
ALTITUDE (FASL)	3300	3300
SAFE STALL TIME-HOT (SEC)	30	30
SOUND PRESSURE (DBA @ 1M)	81	81
TORQUES:		
BREAKDOWN{% F.L.}	218	218
LOCKED ROTOR{% F.L.}	176	176
FULL LOAD{LB-FT}	221	221

NEMA Nominal and Guaranteed Efficiencies are up to 3,300 feet above sea level and 25 ° C ambient

The Above Data Is Typical, Sinewave Power Unless Noted Otherwise

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ST. LOUIS, MO

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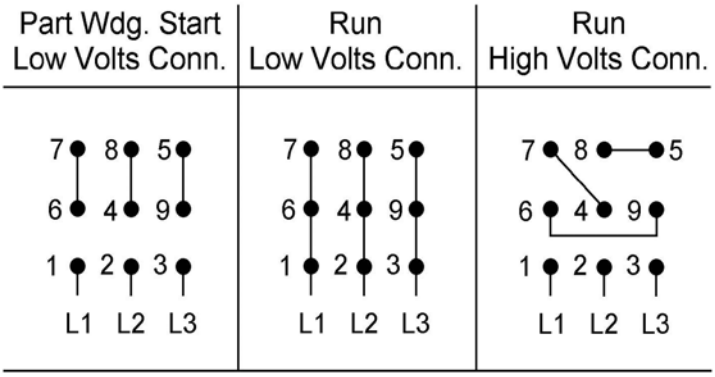
159833

Motor Wiring Diagram

9 Lead, Dual Voltage, Delta Connection
Part Winding Start (PWS) on Low Voltage



Motor good for across the line starting

Per NEMA MG1 1998-1.75, "A Part-winding Start motor is one which certain specially designed circuits of each phase of the primary winding are initially connected to the supply line. The remaining circuit or circuits of each phase are connected to the supply in parallel with initially connected circuits, at a predetermined point in the starting operation." This is intended to limit the inrush current required to start the motor. NEMA MG1 1998-14.38 states that the motor may not accelerate to full speed in part-winding and may be noisier than when on full winding.

Motors designed by US Motors for Part-winding Start also be used for across the line starting using only the full winding connection. Damage will occur if the motor is operated with load for more than 2 seconds on Part-winding without transition to full winding.

To reverse direction of rotation, interchange leads L1 & L2.

Each lead may have one or more cables comprising that lead. In such case, each cable will be marked with the appropriate lead number.

NIDEC MOTOR CORPORATION
ST. LOUIS, MISSOURI

SPECIAL INFORMATION REGARDING PART WINDING STARTING

This motor is not designed to fully accelerate when started with the part winding start connection shown on the motor connection diagram. In order to avoid damaging the motor when it is started with the part winding start connection, set timers so that the motor starter switches the motor connection from start to run within two seconds from the time that the motor is initially energized. The motor is not expected to fully accelerate before the motor connection is switched to run, but the momentary operation on the start connection should allow time for automatic voltage regulators on the power system to compensate for voltage dip resulting from the high current draw of the motor during acceleration. Thus, voltage dip in the power system will be minimized through proper use of the part winding start connection. Once the motor has been switched over to the run connection, it will finish accelerating up to full speed.

During the time that the motor is operated on the part winding start connection, it is expected that the motor may be noisier than when operated on the run connection and it is also expected that the line amp unbalance between phases may be approximately 100% to 150%. This is due to the adverse effect of harmonics that result from the unbalanced magnetic circuit on the part winding start connection.

For further information regarding characteristics of polyphase induction motors when operated on a part winding start connection, refer to NEMA Publication MG 1-1998 Part 14.38.