

Motor Specifications and Electrical Data

Project: _____ Model: _____ Chk'd: _____ Date: _____

1. The data listed below are the design values.
2. The calculation of current is for a power supply of 60 Hz 460 V, direct on line start.
3. For 575 and 230 V, please contact Ebara.
4. For other starting methods, please contact Ebara.
5. Cable specifications:
 - (1) Power cable : Type W
 - (2) Control cable : Standard Type SOW-A/SO AWG#14 x 5C
Optional Type SOW-A/SO AWG#14 x 8C

Motor Data, 60Hz x 460V

Pole	kW (Hp)	Frame No.	Full Load (A)	Efficiency %			Power Factor %		
				1/2 Load	3/4 Load	1/1 Load	1/2 Load	3/4 Load	1/1 Load
4	7.5 (10)								
	11 (15)								
	15 (20)								
	18.5 (25)								
	22 (30)								
	30 (40)								
	37 (50)	292	58	90.2	91.1	90.8	83.3	88.0	89.2
	45 (60)	292	69	90.6	91.5	91.2	85.1	89.1	89.7
	55 (75)	292	84	92.7	93.0	92.4	85.3	89.2	89.7
	75 (100)	292	114	92.2	92.9	92.7	83.3	88.1	89.2
	90 (120)	380	136	90.6	92.0	92.2	88.4	90.7	90.4
	110 (145)	380	166	90.4	91.9	92.2	88.4	90.6	90.2
	132 (175)	380	199	90.9	92.4	92.7	87.6	90.2	90.0
	150 (200)	480	220	92.8	93.8	93.8	91.3	92.4	91.3
	160 (215)	480	233	93.1	94.1	94.1	92.0	92.8	91.6
	185 (245)	480	271	92.8	93.9	93.9	91.1	92.3	91.1
	200 (265)	480	294	93.0	94.0	94.0	90.6	91.9	90.8
	220 (295)	480	325	93.2	94.1	94.1	89.9	91.4	90.4
	250 (335)	590	368	93.4	94.3	94.3	89.9	91.4	90.5
	280 (375)	590	412	93.3	94.3	94.3	90.4	91.7	90.5
315 (422)	590	478	91.5	93.2	94.2	78	86	88	
355 (475)	590	540	91.5	93.2	94.2	78	86	88	

Pole	kW (Hp)	Start Curr. %	Start Torq. %	Mech. Size	Cable Size x Nos.		Bearing Size		NEMA Code Letters
					Star-Delta	Direct on line	Lower	Upper	
4	7.5 (10)								
	11 (15)								
	15 (20)								
	18.5 (25)								
	22 (30)								
	30 (40)								
	37 (50)	545	156	63	N/A	AWG#6 x 1	7220BDB	6212ZZ	F
	45 (60)	535	152	75		AWG#4 x 1	7220BDB	6212ZZ	E
	55 (75)	533	151	75		AWG#8 x 2	7220BDB	6212ZZ	E
	75 (100)	576	163	100		AWG#6 x 2	7220BDB	6212ZZ	F
	90 (120)	637	99	100		AWG#2/0 x 1	7222BDB	6216ZZ	G
	110 (145)	630	98	100		AWG#2/0 x 1	7222BDB	6216ZZ	G
	132 (175)	644	100	100		AWG#1 x 2	7222BDB	6216ZZ	G
	150 (200)	630	88	100		AWG#1 x 2	7226B+QJ	6218ZZ	F
	160 (215)	630	88	100		AWG#1 x 2	7226B+QJ	6218ZZ	F
	185 (245)	629	87	100		AWG#2/0 x 2	7226B+QJ	6218ZZ	F
	200 (265)	628	87	100		AWG#2/0 x 2	7226B+QJ	6218ZZ	F
	220 (295)	616	86	100		AWG#2/0 x 2	7226B+QJ	6218ZZ	F
	250 (335)	626	87	120		AWG#1 x 3	7226BDT+QJ	6220ZZ	F
	280 (375)	611	85	120		AWG#2/0 x 3	7226BDT+QJ	6220ZZ	F
315 (422)	750	160							
355 (475)	750	160							

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Motor Data, 60Hz x 460V

Pole	kW (Hp)	Frame No.	Full Load (A)	Efficiency %			Power Factor %		
				1/2 Load	3/4 Load	1/1 Load	1/2 Load	3/4 Load	1/1 Load
6	7.5 (10)	Contact EBARA							
	11 (15)								
	15 (20)								
	18.5 (25)	292	30	85.3	87.2	87.2	86.2	90.2	91.2
	22 (30)	Contact EBARA							
	30 (40)	292	48	88.5	89.1	88.4	83.6	88.6	89.9
	37 (50)	292	58	90.9	91.2	90.4	81.4	87.4	89.3
	45 (60)	292	70	91.3	91.2	90.2	83.4	88.5	89.7
	55 (75)	292	87	91.7	91.7	90.7	79.5	86.1	88.1
	75 (100)	380	117	91.3	92.0	91.6	81.0	86.6	88.2
	90 (120)	380	140	91.8	92.5	92.2	79.2	85.6	87.7
	110 (145)	380	170	92.3	92.8	92.4	80.6	86.4	88.0
	132 (175)	480	200	92.8	93.4	93.0	85.9	89.1	89.1
	150 (200)	480	226	93.1	93.7	93.4	86.7	89.6	89.5
	160 (215)	480	241	93.3	93.8	93.5	86.2	89.2	89.1
	185 (245)	480	279	93.0	93.7	93.5	86.3	89.3	89.2
	200 (265)	480	299	93.3	94.0	93.7	87.0	89.8	89.6
	220 (295)	590	328	93.4	94.1	93.9	87.0	89.8	89.7
	250 (335)	590	372	93.7	94.3	94.2	86.2	89.4	89.5
280 (375)	590	454	90.5	93.3	94.2	64	75	82	
315 (422)	590	512	90.8	93.2	94.3	64	75	82	
355 (475)	590	579	90.8	93.2	94.3	64	75	82	

Pole	kW (Hp)	Start Curr. %	Start Torq. %	Mech. Size	Cable Size x Nos.		Bearing Size		NEMA Code Letters
					Star-delta	Direct on Line	Lower	Upper	
6	7.5 (10)	Contact EBARA							
	11 (15)								
	15 (20)								
	18.5 (25)	577	152	63	N/A	AWG#8 x 1	7214B+QJ	6212ZZ	F
	22 (30)	Contact EBARA							
	30 (40)	556	154	63	N/A	AWG#6 x 1	7214B+QJ	6212ZZ	F
	37 (50)	612	166	63		AWG#6 x 1	7214B+QJ	6212ZZ	G
	45 (60)	570	140	75		AWG#4 x 1	7220B+QJ	6212ZZ	F
	55 (75)	580	158	75		AWG#8 x 2	7220B+QJ	6212ZZ	F
	75 (100)	539	108	100		AWG#1 x 1	7222B+QJ	6216ZZ	F
	90 (120)	571	115	100		AWG#2/0 x 1	7222B+QJ	6216ZZ	F
	110 (145)	545	109	100		AWG#2/0 x 1	7222B+QJ	6216ZZ	F
	132 (175)	584	104	100		AWG#1 x 2	7222BDT+QJ	6218ZZ	F
	150 (200)	588	102	100		AWG#1 x 2	7226B+QJ	6218ZZ	F
	160 (215)	583	101	100		AWG#1 x 2	7226B+QJ	6218ZZ	F
	185 (245)	586	102	120		AWG#2/0 x 2	7226BDT+QJ	6218ZZ	F
	200 (265)	590	102	120		AWG#2/0 x 2	7226BDT+QJ	6218ZZ	F
	220 (295)	602	104	120		AWG#2/0 x 2	7320BDT+QJ	6220ZZ	F
	250 (335)	619	107	135		AWG#1 x 3	7320BDT+QJ	6220ZZ	F
280 (375)	750	160	Contact EBARA						
315 (422)	750	160							
355 (475)	750	160							

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Motor Data, 60Hz x 460V

Pole	kW (Hp)	Frame No.	Full Load (A)	Efficiency %			Power Factor %		
				1/2 Load	3/4 Load	1/1 Load	1/2 Load	3/4 Load	1/1 Load
8	7.5 (10)	Contact EBARA							
	11 (15)								
	15 (20)								
	18.5 (25)	292	32	85.8	87.6	87.7	68.4	78.4	82.8
	22 (30)	292	38	87.0	88.2	88.2	69.6	79.4	83.5
	30 (40)	292	52	87.6	88.9	88.6	66.7	77.1	81.8
	37 (50)	292	64	89.2	90.0	89.3	68.0	78.1	82.2
	45 (60)	380	76	89.4	90.7	90.8	67.6	77.7	82.2
	55 (75)	380	93	90.0	91.2	91.3	67.0	77.2	81.8
	75 (100)	380	123	90.3	91.6	91.6	70.8	80.0	83.8
	90 (120)	480	141	91.9	93.1	93.2	75.9	83.5	86.0
	110 (145)	480	171	92.6	93.5	93.3	78.3	84.9	86.6
	132 (175)	480	207	91.9	93.0	93.1	77.2	84.1	86.0
	150 (200)	480	236	92.3	93.4	93.5	75.3	83.0	85.4
	160 (215)	480	252	92.4	93.4	93.3	76.9	83.8	85.6
	185 (245)	590	290	92.4	93.7	94.0	78.9	84.5	85.3
	200 (265)	590	311	92.7	93.9	94.1	80.2	85.3	85.9
	220 (295)	590	346	92.4	93.7	94.0	78.2	83.9	85.0
250 (335)	590	392	92.7	93.9	94.2	78.3	84.0	85.0	
280 (375)	590	441	92.9	94.1	94.4	76.2	82.8	84.5	
315 (422)	670	560	91.8	93.5	94.2	55	68	75	
355 (475)	670	631	92	93.5	94.4	55	68	75	

Pole	kW (Hp)	Start Curr. %	Start Torq. %	Mech. Size	Cable Size x Nos.		Bearing Size		NEMA Code Letters
					Star-delta	Direct on Line	Lower	Upper	
8	7.5 (10)	Contact EBARA							
	11 (15)								
	15 (20)								
	18.5 (25)	556	163	63	N/A	AWG#8 x 1	7214BDB	6212ZZ	G
	22 (30)	542	160	63		AWG#8 x 1	7214BDB	6212ZZ	F
	30 (40)	540	160	75		AWG#6 x 1	7220BDB	6212ZZ	G
	37 (50)	511	150	75		AWG#4 x 1	7220BDB	6212ZZ	F
	45 (60)	541	139	63		AWG#4 x 1	7216B+QJ	6216ZZ	F
	55 (75)	544	141	75		AWG#1 x 1	7216B+QJ	6216ZZ	F
	75 (100)	546	138	100		AWG#1 x 1	7222B+QJ	6216ZZ	F
	90 (120)	621	133	100		AWG#2/0 x 1	7222B+QJ	6218ZZ	G
	110 (145)	580	150	100		AWG#2/0 x 1	7222B+QJ	6218ZZ	F
	132 (175)	580	124	100		AWG#1 x 2	7226B+QJ	6218ZZ	F
	150 (200)	600	129	100		AWG#1 x 2	7226B+QJ	6218ZZ	G
	160 (215)	562	121	100		AWG#1 x 2	7226BDT+QJ	6218ZZ	F
	185 (245)	569	98	120		AWG#2/0 x 2	7226BDT+QJ	6220ZZ	F
	200 (265)	568	98	120		AWG#2/0 x 2	7226BDT+QJ	6220ZZ	F
	220 (295)	570	98	120		AWG#4/0 x 2	7230BDT+QJ	6220ZZ	F
250 (335)	568	98	120	AWG#2/0 x 3		7230BDT+QJ	6220ZZ	F	
280 (375)	595	103	135	AWG#2/0 x 3		7230BDT+QJ	6220ZZ	F	
315 (422)	700	160	Contact EBARA						
355 (475)	700	160							

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Project: _____ Model: _____ Chk'd: _____ Date: _____

Motor Data, 60Hz x 460V

Pole	kW (Hp)	Frame No.	Full Load (A)	Efficiency %			Power Factor %		
				1/2 Load	3/4 Load	1/1 Load	1/2 Load	3/4 Load	1/1 Load
10	15 (20)	380	27	83.8	86.3	86.8	66.7	76.2	80.6
	18.5 (25)	380	33	85.1	87.4	87.9	67.4	76.7	81.1
	22 (30)	380	40	85.8	88.1	88.6	62.2	73.1	78.6
	30 (40)	380	53	88.1	89.7	89.8	64.1	74.4	79.3
	37 (50)	380	66	88.6	90.1	90.2	62.3	73.2	78.5
	45 (60)	380	78	89.2	90.6	90.5	66.2	75.8	80.3
	55 (75)	380	96	90.2	91.3	91.1	65.0	75.0	79.6
	75 (100)	480	118	91.5	92.6	92.6	78.3	84.6	86.2
	90 (120)	480	143	91.9	93.0	93.0	75.7	82.9	85.3
	110 (145)	480	174	92.4	93.5	93.5	74.9	82.5	85.2
	132 (175)	590	209	92.0	93.3	93.6	74.7	82.3	84.9
	150 (200)	590	236	92.2	93.4	93.7	75.4	82.8	85.2
	160 (215)	590	255	92.3	93.6	93.9	73.1	81.3	84.1
	185 (245)	590	292	92.2	93.4	93.7	75.7	82.8	84.9
	200 (265)	590	315	92.3	93.6	93.9	75.1	82.5	84.8
	220 (295)	590	344	92.6	93.7	93.8	78.0	84.2	85.6
250 (335)	590	394	92.4	93.6	93.9	76.0	82.9	84.9	
280 (375)	670	531	91.5	92.5	93.8	50	63	71	
315 (422)	670	598	92	93	94	50	63	71	

Pole	kW (Hp)	Start Curr. %	Start Torq. %	Mech. Size	Cable Size x Nos.		Bearing Size		NEMA Code Letters
					Star-delta	Direct on Line	Lower	Upper	
10	15 (20)	507	127	63	N/A	AWG#8 x 1	7216BDB	6216ZZ	F
	18.5 (25)	515	129	63		AWG#8 x 1	7216BDB	6216ZZ	F
	22 (30)	540	138	63		AWG#8 x 1	7216BDB	6216ZZ	G
	30 (40)	513	128	63		AWG#6 x 1	7216BDB	6216ZZ	F
	37 (50)	523	132	63		AWG#4 x 1	7216B+QJ	6216ZZ	F
	45 (60)	510	126	75		AWG#4 x 1	7216B+QJ	6216ZZ	F
	55 (75)	504	125	75		AWG#1 x 1	7216B+QJ	6216ZZ	F
	75 (100)	535	100	100		AWG#1 x 1	7222B+QJ	6218ZZ	F
	90 (120)	558	105	100		AWG#2/0 x 1	7222B+QJ	6218ZZ	F
	110 (145)	576	109	120		AWG#4/0 x 1	7226B+QJ	6218ZZ	F
	132 (175)	602	113	120		AWG#1 x 2	7226BDT+QJ	6220ZZ	G
	150 (200)	597	111	120		AWG#1 x 2	7226BDT+QJ	6220ZZ	G
	160 (215)	605	114	120		AWG#1 x 2	7226BDT+QJ	6220ZZ	G
	185 (245)	570	106	120		AWG#2/0 x 2	7230BDT+QJ	6220ZZ	F
	200 (265)	588	110	120		AWG#2/0 x 2	7230BDT+QJ	6220ZZ	F
	220 (295)	549	102	135		AWG#2/0 x 2	7230BDT+QJ	6220ZZ	F
250 (335)	565	106	135	AWG#2/0 x 3	7230BDT+QJ	6220ZZ	F		
280 (375)	700	140		Contact EBARA					
315 (422)	700	140							

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Motor Data, 60Hz x 460V

Pole	kW (Hp)	Frame No.	Full Load (A)	Efficiency %			Power Factor %		
				1/2 Load	3/4 Load	1/1 Load	1/2 Load	3/4 Load	1/1 Load
12	22 (30)	380	40	85.0	87.2	87.6	63.7	74.7	80.1
	30 (40)	380	53	88.1	89.8	89.8	64.7	75.5	80.5
	37 (50)	380	65	88.2	89.8	89.8	63.2	74.3	79.7
	45 (60)	380	82	88.2	89.7	89.7	59.3	71.0	77.0
	55 (75)	480	98	88.8	90.5	90.9	61.4	72.6	78.1
	75 (100)	480	136	89.3	91.0	91.3	59.2	70.5	76.2
	90 (120)	480	159	90.0	91.4	91.7	61.7	72.6	77.7
	110 (145)	590	181	91.0	92.6	93.0	67.4	77.7	82.2
	132 (175)	590	217	90.8	92.4	92.9	67.9	77.8	82.1
	150 (200)	590	247	91.1	92.6	93.0	67.6	77.7	82.0
	160 (215)	590	256	91.3	92.8	93.1	72.7	81.3	84.4
	185 (245)	590	302	91.6	93.0	93.3	68.7	78.5	82.5
	200 (265)	590	321	91.7	93.0	93.2	71.9	80.7	84.0
	220 (295)	590	377	91.2	92.8	93.3	61.8	73.1	78.6
	250 (335)	670	531	90.2	91.5	92.8	43	53	64
280 (375)	670	593	90.5	91.8	93	43	53	64	
315 (422)	670	685	91	92	93.5	41	52	62	

Pole	kW (Hp)	Start Curr. %	Start Torq. %	Mech. Seal Size	Cable Size x Nos.		Power Factor %		NEMA Code Letters		
					Star-delta	Direct on Line	Lower	Upper			
12	22 (30)	565	136	63	NA	AWG#8x1	7216BDB	6216XX			
	30 (40)	568	135	63		AWG#6x1	7216B+QJ	6216XX			
	37 (50)	575	136	63		AWG#4x1	7216B+QJ	6216XX			
	45 (60)	560	135	100		AWG#4x1	7222BDB	6216XX			
	55 (75)	589	117	100		AWG#1x1	7222B+QJ	6218XX			
	75 (100)	572	114	100		AWG#2/0x1	7222B+QJ	6218XX			
	90 (120)	565	110	100		AWG#2/0x1	7222B+QJ	6218XX			
	110 (145)	560	110	120		AWG#4/0x1	7226BDT+QJ	6220XX			
	132 (175)	547	106	120		AWG#1x2	7226BDT+QJ	6220XX			
	150 (200)	547	106	120		AWG#1x2	7226BDT+QJ	6220XX			
	160 (215)	518	99	120		AWG#1x2	7226BDT+QJ	6220XX			
	185 (245)	538	104	120		AWG#2/0x2	7226BDT+QJ	6220XX			
	200 (265)	516	99	120		AWG#2/0x2	7230BDT+QJ	6220XX			
	220 (295)	560	112	135		AWG#1x3	7230BDT+QJ	6220XX			
	250 (335)	650	140	135		Contact EBARA					
	280 (375)	650	140	135		Contact EBARA					
	315 (422)	650	120	135		N/A	AWG#4/0x3	Later	Later		

