



東元低壓全密型TEFC泵浦用馬達

MODEL : AEEHED

HIGH THRUST SOLIDSHAFT PUMP MOTORS
LOW VOLTAGE SQUIRREL CAGE
FRAME SIZE : 182VP ~ 405VP



DWG NO.

31049J16701

REV.03

		SPECIFICATION TABLE	MODEL AEEHED
		HIGH THRUST SOLIDSHAFT PUMP MOTORS LOW VOLTAGE SQUIRREL CAGE	
ITEM		STANDARD SPECIFICATION	
R A T I N G	Kind of Motors	Squirrel Cage Induction Motors (SCIM),VHS,TEFC	
	Design Standards	NEMA MG-1, EPAAct Efficiency / Premium Efficiency	
	Voltages	230V / 460V (208V De-Rating Operation) , 460V , 575V .	
	Frequency	60Hz .	
	Output Range	1HP ~ 100HP .	
	R.P.M. (Syn.)	3600 ~900 R.P.M. (2 , 4 , 6 and 8 Poles) .	
	Time Duty	Continuous , S.F. 1.15	
	Frame Size	182VP ~ 405VP .	
	Protection Enclosure	Totally Enclosed Fan Cooled (IPW44) .	
	Cooling Method	Self External Fan, Surface Cooling (IC 411) .	
	Mounting	Flange Mounting (IM3011) .	
High Thrust Load	As PERFORMANCE DATA		
A P P L I C A T I O N	Power Conditions	Voltage : $\pm 10\%$, Frequency : $\pm 5\%$, and $\pm 10\%$ Max. of Combined Voltage and Frequency, But Frequency Variation Does Not Exceed $\pm 5\%$.	
	Designed Primarily	For Deep Well Turbine Pump .	
	Environment Conditions	Place : Outdoor , Non-Hazardous , Ambient Temperature : $-15^{\circ}\text{C} \sim 40^{\circ}\text{C}$ Relative Humidity : Less Than 90%RH (Non-Condensation) . Altitude : Less Than 3,300ft CSA Class I, Div 2, Group B, C & D, T3	
	Operating Conditions	For Coupling .	
	Direction of Rotation	Counter-Clock-Wise (View From Top) .	
	Method of Starting	Full Voltage Direct-On-Line or VFD or $\lambda - \Delta$ Starting	
P E R F O R M A N C E	Test Procedure	IEEE-112 Method-B and Full Voltage Measuring Starting Performance .	
	Temperature Rise	Not to Exceed 90°C (Fr#400VP: 105°C) for S.F. 1.15 or 80°C for S.F. 1.0 By Resistance Method .	
	Over Speed	125% Syn. R.P.M. for Two Min. (2,4, Poles) ; 150% Syn. R.P.M. for Two Min. (6 Pole) .	
	Over Torque	160% Rated Torque for 15 Sec .	
	Grounding Terminal	Be Set Inside of Terminal Housing .	

	PERFORMANCE DATA	MODEL AEEHED
	HIGH THRUST HOLLOWSHAFT PUMP MOTOR LOW VOLTAGE SQUIRREL CAGE	



TEFC, NEMA T - FRAME, DESIGN - B,
CLASS F, 40°C AMBIENT, CONTINUOUS DUTY,
S.F. 1.15 230/460V 60Hz

TYPICAL PERFORMANCE

(230V)

HP	FULL LOAD RPM	FRAME SIZE	EFFICIENCY(%)				POWER FACTOR(%)			CURRENT		TORQUE				ROTOR WK ² lb-ft ²	DOWN THRUST lbs	NEMA CODE LETTER
			FULL LOAD		3/4 LOAD NOM.	1/2 LOAD NOM.	FULL LOAD	3/4 LOAD	1/2 LOAD	FULL LOAD (A)	LOCKED ROTOR (A)	FULL LOAD lb-ft	LOCKED ROTOR %FLT	PULL UP %FLT	BREAK DOWN %FLT			
			NOM.	MIN.														
1	860	182VP	77.0	74.0	75.5	70.0	58.5	49.5	38.0	4.16	30	6.105	200	150	270	0.239	2200	N
1.5	1170	182VP	87.5	85.5	85.5	82.5	63.5	55.0	42.5	5.06	40	6.731	210	190	350	0.313	2000	M
	860	184VP	78.5	75.5	76.0	71.0	60.5	51.5	39.5	5.91	40	9.158	200	150	270	0.275	2200	M
2	1170	184VP	88.5	86.5	88.5	86.5	70.5	63.0	50.5	6.00	50	8.975	180	150	270	0.423	2000	L
	865	213VP	85.5	82.5	84.0	81.0	68.0	58.0	45.0	6.44	50	12.14	200	190	290	0.586	3300	L
3	3490	182VP	88.5	86.5	90.2	89.5	90.0	87.0	79.5	7.05	64	4.513	280	250	380	0.190	1400	K
	1755	182VP	89.5	87.5	89.5	87.5	81.5	77.0	66.5	7.70	64	8.975	225	175	300	0.367	1750	K
	1175	213VP	89.5	87.5	89.5	87.5	78.0	70.5	58.5	7.17	64	13.41	210	180	340	0.918	2950	K
	865	215VP	85.5	82.5	85.5	83.0	66.0	56.0	45.0	9.96	64	18.21	240	210	300	0.821	3300	K
5	3480	184VP	88.5	86.5	89.5	89.5	92.5	91.0	85.5	11.4	92	7.544	290	230	320	0.272	1400	J
	1745	184VP	89.5	87.5	88.5	88.5	85.5	81.5	71.5	12.2	92	15.04	185	140	285	0.422	1750	J
	1170	215VP	91.0	89.5	91.0	89.5	82.5	77.0	65.5	11.5	92	22.44	190	160	300	1.224	2950	J
	870	254VP	87.5	85.5	87.5	86.5	72.0	64.0	51.0	14.9	92	30.18	190	180	250	1.660	4200	J
7.5	3510	213VP	91.0	89.5	91.0	90.2	89.0	87.0	80.0	17.3	127	11.22	200	175	275	0.448	2000	H
	1755	213VP	91.7	90.2	91.0	89.5	86.5	82.0	72.0	17.7	127	22.44	250	155	270	0.848	2600	H
	1170	254VP	91.0	89.5	91.0	89.5	80.5	75.0	64.0	17.2	127	33.66	240	215	270	2.158	3850	H
	875	256VP	87.5	85.5	87.5	85.5	74.0	66.0	53.0	21.7	127	45.00	220	190	280	2.872	4200	H
10	3510	215VP	91.0	89.5	91.7	91.0	89.5	88.5	82.5	23.0	162	14.96	220	180	260	0.573	2000	H
	1755	215VP	91.7	90.2	91.0	91.0	88.0	84.0	75.5	23.2	162	29.92	250	145	260	1.082	2600	H
	1170	256VP	91.0	89.5	91.7	90.2	80.5	75.0	64.0	22.8	162	44.88	225	185	250	2.872	3850	H
	885	284VP	90.2	88.5	90.2	89.5	73.5	66.0	53.5	28.2	162	59.33	235	210	280	5.421	4400	H
15	3525	254VP	92.4	91.0	92.4	91.7	91.5	90.5	86.0	33.2	232	22.34	210	180	270	1.088	2700	G
	1765	254VP	92.4	91.0	93.0	92.4	88.0	85.0	77.0	34.5	232	44.62	245	180	270	2.179	3350	G
	1175	284VP	92.4	91.0	93.0	93.0	83.5	79.5	70.5	32.7	232	67.03	215	180	230	6.823	3850	G
	875	286VP	90.2	88.5	90.2	90.2	78.0	73.0	62.0	39.9	232	90.01	200	170	230	7.961	4400	G
20	3520	256VP	92.4	91.0	93.0	93.6	92.5	91.5	88.0	43.8	290	29.83	210	180	260	1.407	2700	G
	1760	256VP	93.0	91.7	92.4	92.4	87.5	84.5	78.5	46.0	290	59.66	200	145	240	2.871	3350	G
	1170	286VP	91.7	90.2	92.4	92.4	84.0	81.0	73.0	44.2	290	89.75	210	160	225	8.340	3850	G
	875	324VP	91.0	89.5	91.7	91.7	81.0	77.0	68.0	50.8	290	120.0	200	150	210	10.390	6000	G
25	3545	284VP	92.4	91.0	93.0	92.4	91.0	90.5	86.5	55.7	365	37.03	175	135	250	2.507	2700	G
	1765	284VP	93.6	92.4	93.6	93.6	86.0	83.0	77.0	58.2	365	74.37	205	165	240	4.586	3350	G
	1170	324VP	93.0	91.7	93.6	93.6	83.0	80.0	71.5	53.8	365	112.2	200	155	205	11.877	5200	G
	875	326VP	91.0	89.5	91.7	91.7	80.0	76.0	66.0	64.3	365	150.0	200	170	220	12.370	6000	G
30	3545	286VP	93.0	91.7	93.6	93.0	91.0	90.5	87.5	66.4	435	44.43	175	140	240	2.831	2700	G
	1770	286VP	93.6	92.4	93.6	93.6	87.5	85.5	79.5	68.6	435	88.99	200	160	235	5.274	3350	G
	1175	326VP	93.0	91.7	93.6	93.6	80.5	78.5	71.0	64.5	435	134.1	210	180	230	12.372	5200	G
	885	364VP	93.0	91.7	93.0	92.4	78.0	73.0	61.0	77.4	435	178.0	210	170	240	17.940	7500	G
40	3550	324VP	94.1	93.0	94.5	94.1	90.0	89.0	84.5	88.4	580	59.16	150	130	240	3.590	3600	G
	1770	324VP	94.1	93.0	94.5	94.5	86.0	84.5	78.5	92.6	580	118.7	205	170	220	8.624	4500	G
	1180	364VP	94.1	93.0	94.5	94.1	86.5	84.5	78.0	84.6	580	178.0	200	150	220	17.937	6600	G
	885	365VP	93.0	91.7	93.0	92.4	78.0	73.0	62.0	103	580	237.3	210	160	230	19.320	7500	G
50	3550	326VP	94.1	93.0	94.5	94.5	91.0	90.0	86.5	109	725	73.95	150	130	240	4.488	3600	G
	1770	326VP	94.5	93.6	95.0	95.0	87.0	86.0	80.5	114	725	148.3	210	170	220	10.124	4500	G
	1180	365VP	94.1	93.0	94.5	93.6	86.0	83.0	75.5	106	725	222.5	225	170	240	21.386	6600	G
	885	404VP	93.0	91.7	93.6	93.6	81.0	77.0	68.0	124	725	296.6	210	175	230	31.470	10500	G
60	3550	364VP	94.1	93.0	94.5	94.1	93.0	92.0	88.5	128	870	88.74	145	130	240	7.379	3600	G
	1775	364VP	95.0	94.1	95.0	94.5	86.5	83.0	75.5	137	870	177.5	200	155	240	12.229	6000	G
	1180	404VP	94.5	93.6	94.5	94.1	87.0	86.5	80.5	126	870	267.0	200	185	245	33.535	9000	G
	885	405VP	93.0	91.7	93.6	93.6	81.0	78.0	68.0	149	870	356.0	200	180	230	32.550	10500	G
75	3555	365VP	94.5	93.6	95.0	95.0	93.0	92.5	89.0	160	1085	110.8	145	130	250	9.056	3600	G
	1775	365VP	95.4	94.5	95.4	95.0	86.5	83.5	75.5	170	1085	221.9	200	165	250	14.674	6000	G
	1180	405VP	94.5	93.6	94.5	94.5	86.5	84.5	79.0	157	1085	333.7	200	175	225	37.862	9000	G
100	3560	405VP	95.4	94.5	95.8	95.4	92.0	91.5	88.5	213	1450	147.5	140	125	270	10.773	3600	G
	1775	405VP	95.4	94.5	95.4	95.0	87.5	85.5	80.0	224	1450	295.8	215	140	215	26.637	7900	G

- NOTE :
- The above are typical values based on test according to ANSI/IEEE standard 112 method B.
 - Breakdown & locked rotor torques are shown as average expected values.
 - Efficiency, power factor, speed and torque are the same for other voltages. Current values vary inversely with voltage.
 - Declared efficiency hasn't taken into account of thrust load losses.
 - Tolerance According to NEMA MG1-12 & IEC 60034-1.
 - Thrust load losses estimated as follows : (According to NEMA standard MG1-12.7).

FRAME SIZE	2 P	4, 6, 8 P	FRAME SIZE	2 P	4, 6, 8 P
182VP ~ 184VP	0.0076	0.0076	324VP ~ 326VP	0.0151	0.0151
213VP ~ 215VP	0.0104	0.0104	364VP ~ 365VP	0.0170	0.0180
254VP ~ 256VP	0.0113	0.0113	404VP ~ 405VP	0.0189	0.0227
284VP ~ 286VP	0.0123	0.0123			

UNIT : LOSS HP / 100 RPM / 1000 LB THRUST

7. Reducing the thrust load will increase bearing life as follows :

% THRUST	100	83	75	65	59	54
Min. Life (Hrs)	8800	15000	20000	30000	40000	50000

8. Frame size 324VP to 365VP 175% of standard thrust load are acceptable under made-to-order

9. Data subject to change without notice.

OUTLINE DIMENSIONS SHEET

HIGH THRUST SOLIDSHAFT PUMP MOTORS
FRAME SIZE 182VP ~ 405VP

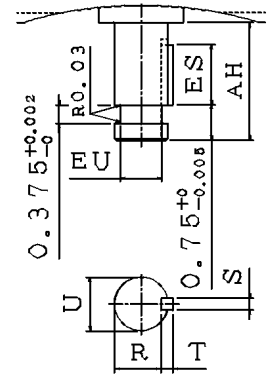
MODEL

AEEHED

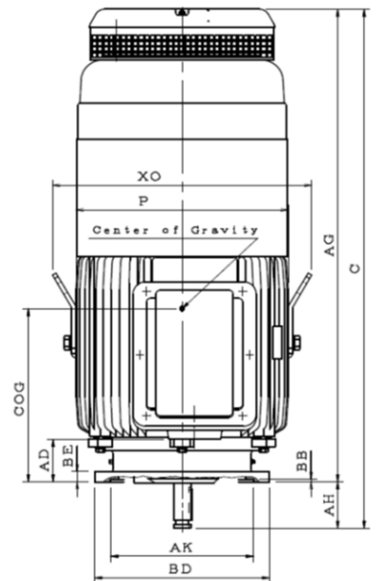
Dimension in inches

Totally Enclosed Fan Cooled Vertical Type . Squirrel Cage Rotor .

Output (HP)				FRAME SIZE	Mounting						AG	AH	C	F	P	XO	COG	RCF
2P	4P	6P	8P		AK	AJ	BD	BF	BB	BE								
3	3	1.5	1	182VP	8.25	9.125	9.85	0.44	0.20	0.79	18.64	2.75	21.39	-	9.37	11.770	6.16	183.9
5	5	2	1.5	184VP	8.25	9.125	9.85	0.44	0.20	0.79	19.67	2.75	22.42	-	9.37	11.770	6.76	166.7
7.5	7.5	3	2	213VP	8.25	9.125	10.00	0.44	0.20	0.79	22.68	2.75	25.43	-	10.75	13.390	7.81	123
10	10	5	3	215VP	8.25	9.125	10.00	0.44	0.20	0.79	24.17	2.75	26.92	-	10.75	13.390	8.71	116.2
15	15	7.5	5	254VP	8.25	9.125	10.00	0.44	0.20	0.59	25.57	2.75	28.32	-	13.15	17.087	10.34	121
20	20	10	7.5	256VP	8.25	9.125	10.00	0.44	0.20	0.59	27.31	2.75	30.06	-	13.15	17.087	11.40	98
25	25	15	10	284VP	8.25	9.125	10.00	0.44	0.20	0.58	28.17	2.75	30.92	-	15.04	18.980	11.70	95
30	30	20	15	286VP	8.25	9.125	10.00	0.44	0.20	0.58	29.66	2.75	32.41	-	15.04	18.980	12.60	86
40	40	25	20	324VP	13.50	14.750	16.50	0.69	0.25	0.80	31.29	4.50	35.79	-	16.54	20.470	12.90	113
50	50	30	25	326VP	13.50	14.750	16.50	0.69	0.25	0.80	32.79	4.50	37.29	-	16.54	20.470	13.80	97
60	-	-	-	364VP	13.50	14.750	16.50	0.69	0.25	0.88	38.02	4.50	42.52	12.00	18.03	22.640	14.10	63
-	60	40	30	364VP	13.50	14.750	16.50	0.69	0.25	0.88	35.61	4.50	40.11	-	18.03	22.640	14.10	63
75	-	-	-	365VP	13.50	14.750	16.50	0.69	0.25	0.88	36.79	4.50	41.29	12.00	18.03	22.640	14.70	63.5
-	75	50	40	365VP	13.50	14.750	16.50	0.69	0.25	0.88	36.60	4.50	41.10	-	18.03	22.640	14.70	63.5
-	-	60	50	404VP	13.50	14.750	16.50	0.69	0.25	1.01	44.37	4.50	48.87	12.99	20.07	24.570	14.70	51.8
100	-	-	-	405VP	13.5	14.75	16.5	0.69	0.25	1.01	45.87	4.5	50.37	12.99	20.07	24.57	16.50	48
-	100	75	60	405VP	13.5	14.75	16.5	0.69	0.25	1.01	45.87	4.5	50.37	12.99	20.07	24.57	16.50	48



FRAME SIZE	R	Key			Shaft Extension			Terminal Housing					Bearings		APPROX. WEIGHT LBS
		S	T	ES	EU	U	V	AA	AB	AC	AD	XB	LOWER END	UPPER END	
182VP	0.986	0.250	0.250	1.26	0.875	1.125	2.50	3/4"	8.27	6.38	3.37	0.59	6306ZCC3	7308B	93
184VP	0.986	0.250	0.250	1.26	0.875	1.125	2.50	3/4"	8.27	6.38	3.86	0.59	6306ZCC3	7308B	135
213VP	0.986	0.250	0.250	1.26	0.875	1.125	2.50	1"	9.80	7.36	4.39	0.51	6209ZCC3	7310B	205
215VP	0.986	0.250	0.250	1.26	0.875	1.125	2.50	1"	9.80	7.36	5.14	0.51	6209ZCC3	7310B	215
254VP	0.986	0.250	0.250	1.26	0.875	1.125	2.50	1 1/4"	11.30	8.86	4.96	0.39	6309ZCC3	7311B	325
256VP	0.986	0.250	0.250	1.26	0.875	1.125	2.50	1 1/4"	11.30	8.86	5.82	0.39	6309ZCC3	7311B	382
284VP	0.986	0.250	0.250	1.26	0.875	1.125	2.50	1 1/2"	13.27	10.35	6.08	0.39	6311ZCC3	7312B	479
286VP	0.986	0.250	0.250	1.26	0.875	1.125	2.50	1 1/2"	13.27	10.35	6.82	0.39	6311ZCC3	7312B	520
324VP	1.416	0.375	0.375	3.03	1.250	1.625	4.25	2"	14.72	11.30	5.31	0.79	6312C3	7315B	692
326VP	1.416	0.375	0.375	3.03	1.250	1.625	4.25	2"	14.72	11.30	6.05	0.79	6312C3	7315B	743
364VP	1.416	0.375	0.375	3.03	1.250	1.625	4.25	3"	16.81	12.99	3.72	1.18	6313C3 (* 7220B)	7318B	1147 915
365VP	1.416	0.375	0.375	3.03	1.250	1.625	4.25	3"	16.81	12.99	4.21	1.18	6313C3 (* 7220B)	7318B	1255 1044
404VP	1.416	0.375	0.375	3.03	1.250	1.625	4.25	3"	19.41	14.76	3.38	1.18	6315C3	* 7322B	1400
405VP	1.416	0.375	0.375	3.03	1.250	1.625	4.25	3"	19.41	14.76	4.13	1.18	6315C5 (* 7222B)	* 7322B	1373 1499



- Note :
- 1.Dimension AK Tolerance : for 8.250 inches +0.003 inches , -0 inches ,
for 13.500 inches +0.005 inches , -0 inches .
 2. Dimension U Tolerance : for 1.125 ~ 1.625 inches +0 inches , -0.0005 inches ,
for 2.125 inches +0 inches , -0.001 inches .
 3. Dimension R Tolerance : +0 inches , -0.005 inches .
 4. Dimension EU Tolerance : +0 inches , -0.005 inches .
 5. Dimension AH Tolerance : +0.031 inches , -0.031 inches .
 6. Face Runout and Permissible Eccentricity of Mounting Rabbet 0.007 inches .
 7. Permissible Shaft Runout 0.002 inches Indicator Reading .
 8. Useable Shaft Length for V .
 9. *Marked Bearings is Oil Lubricated , The Other is Grease Lubricated .
 10. Parentheses Bearing Numbers Apply for 2 Pole Motors .

