

Squirrel Cage 3-Phase Induction Motor



NEMA STANDARD

TS21F-N SERIES

Horizontal Foot Mounting

3-Phase 60Hz / 460V, 575V, 2300V, 4160V, 6600V

Frame Size N5009 ~ N8810 (NEMA Basis)

TEFC FIN FRAME CONSTRUCTION

STANDARD SPECIFICATIONS

- Output : 150HP ~ 2500HP
- Poles : 2P ~ 10P
- Frame size : 5009 ~ 8810 (NEMA Basis)
- Voltage : 460V, 575V, 2300V, 4160V, 6600V
- Frequency : 60Hz
- Enclosure : Totally Enclosed Fan Cooled (TEFC)
- Mounting : Horizontal Foot Mounted
- Insulation : Class F
- Temperature rise : Class B (80°C by Resistance Method at S.F. 1.0)
- Environment : Ambient Temperature 40°C

PREMIUM FEATURES

- **Optimized Cast Iron Fin Frame**
Optimum fin design ensures efficient heat exchange. Extra mounting holes give compatible frame choice.
- **Reliable Rotor Construction**
Compact design and precise balancing provide reliable operation. Improved arrangement of ventilation path inside rotor greatly raises cooling efficiency.
- **Durable Bearing Construction**
Proper bearing selection and bearing life calculation ensure lasting operation. Grease inlet nipple and discharge pipe assure easy and safe maintenance.
- **Large Size Terminal Box**
Large size terminal box made of high-grade cast iron or steel plate provides ample space and tough enclosure for cable connection.
- **V.P.I. Stator Winding**
For medium and high voltage motors, Stator winding with V.P.I. treatment meets class F insulation and gives high resistance to corona.
For low voltage motors, Stator winding with fine varnish treatment meets class F insulation and gives high reliability and long life.
- **Low Noise Construction**
Low noise construction for 85 dBA and below is available on request.

Squirrel Cage 3-Phase Induction Motor

PERFORMANCE DATA

OUTPUT HP	FULL LOAD RPM	FRAME SIZE	CURRENT		TORQUE			EFFICIENCY			POWER FACTOR		
			FULL LOAD (A)	LOCKED ROTOR (A)	FULL LOAD (kg-m)	LOCKED ROTOR (%)	BREAK DOWN (%)	FULL LOAD (%)	3/4 LOAD (%)	1/2 LOAD (%)	FULL LOAD (%)	3/4 LOAD (%)	1/2 LOAD (%)
200	880	N5009	241	1500	165	110	220	94.5	94.1	92.5	82.2	77.0	67.0
	705	N5009	264	1600	206	110	210	94.5	94.1	92.5	75.0	69.0	57.0
250	880	N5009	301	1950	206	110	220	94.5	94.1	92.5	82.2	77.0	67.0
	705	N5009	330	1950	258	110	210	94.5	94.1	92.5	75.0	69.0	57.0
300	3560	N5009	323	2200	61	90	200	95.5	95.0	93.5	91.0	89.5	85.0
	1770	N5009	340	2200	123	100	200	95.5	95.0	93.5	86.5	82.5	76.0
	1175	N5009	351	2200	186	110	210	95.2	94.8	93.0	84.0	79.5	72.0
	880	N5009	362	2200	248	110	220	94.5	94.1	92.5	82.2	77.0	67.0
	705	N5009	396	2250	309	100	210	94.5	94.1	92.5	75.0	69.0	57.0
350	3560	N5009	377	2550	71	90	200	95.5	95.0	93.5	91.0	89.5	85.0
	1770	N5009	394	2550	144	100	200	95.5	95.0	93.5	87.0	83.0	76.5
	1175	N5009	410	2550	216	100	200	95.2	94.8	93.0	84.0	79.5	72.0
	885	N5808	412	2550	287	100	210	95.2	94.8	93.0	83.5	79.0	70.0
	710	N5808	451	2550	358	100	200	95.0	94.5	93.0	76.5	71.0	59.0
400	3560	N5009	431	2950	82	90	210	95.5	95.0	93.5	91.0	89.5	85.0
	1770	N5009	451	2950	164	100	210	95.5	95.0	93.5	87.0	83.0	76.5
	1175	N5009	457	2950	247	100	210	95.2	94.8	93.0	86.0	82.0	74.0
	885	N5808	468	2950	328	100	210	95.2	94.8	93.0	84.0	79.5	71.0
	710	N5810	511	2950	409	100	200	95.2	94.8	93.0	77.0	71.5	59.5
450	3560	N5808	483	3300	92	90	210	95.8	95.5	94.0	91.0	89.5	85.0
	1770	N5009	511	3300	185	100	210	95.8	95.5	94.0	86.0	82.0	75.5
	1175	N5011	516	3300	278	100	210	95.5	95.0	93.5	85.5	81.5	73.5
	885	N5810	525	3300	369	100	210	95.5	95.0	93.5	84.0	79.5	71.0
	710	N6310	566	3300	461	100	200	95.5	95.0	93.5	78.0	72.0	60.0
500	3560	N5808	537	3650	102	90	200	95.8	95.5	94.0	91.0	89.5	85.0
	1770	N5011	565	3650	205	100	210	95.8	95.5	94.0	86.5	82.5	76.0
	1180	N5808	577	3650	308	100	210	95.5	95.0	93.5	85.0	81.0	73.0
	885	N5810	584	3650	411	100	210	95.5	95.0	93.5	84.0	79.5	71.0
	710	N6310	628	3650	512	100	200	95.5	95.0	93.5	78.0	72.0	60.0
600	3560	N5808	644	4400	122	90	210	95.8	95.5	94.0	91.0	89.5	85.0
	1775	N5808	680	4400	246	100	200	96.0	95.7	94.2	86.0	82.0	75.5
	1180	N5810	690	4400	369	100	210	95.8	95.5	94.0	85.0	81.0	73.0
	885	N6310	690	4350	493	100	210	95.8	95.5	94.0	85.0	81.0	73.0
	710	N6310	749	4350	614	100	200	95.5	95.0	93.5	78.5	72.5	60.5
700	3560	N5810	750	5000	143	90	210	96.0	95.7	94.2	91.0	89.5	85.0
	1775	N5810	774	5000	287	100	210	96.2	96.0	95.0	88.0	84.0	78.0
	1180	N6310	785	5000	431	100	210	96.0	95.7	94.2	87.0	83.0	77.0
800	1780	N5810	880	5750	327	90	200	96.2	96.0	95.0	88.5	84.5	78.5
	1180	N6310	897	5750	493	90	210	96.0	95.7	94.2	87.0	83.0	77.0
900	1780	N6310	973	6300	367	90	200	96.2	96.0	95.0	90.0	87.5	80.0

Note:

- Above data are typical values and for reference only.
- (a) For motor 500HP and smaller; performance test per ANSI/IEEE standard 112 method B with reduced voltage starting characteristics.
(b) For motor above 500HP; performance test per ANSI/IEEE standard 112 method F1 with reduced voltage starting characteristics.

ALL DATA ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

PERFORMANCE DATA

OUTPUT HP	FULL LOAD RPM	FRAME SIZE	CURRENT		TORQUE			EFFICIENCY			POWER FACTOR		
			FULL LOAD (A)	LOCKED ROTOR (A)	FULL LOAD (kg-m)	LOCKED ROTOR (%)	BREAK DOWN (%)	FULL LOAD (%)	3/4 LOAD (%)	1/2 LOAD (%)	FULL LOAD (%)	3/4 LOAD (%)	1/2 LOAD (%)
200	880	N5009	193	1170	165	110	220	94.5	94.1	92.5	82.2	77.0	67.0
	705	N5009	211	1170	206	110	210	94.5	94.1	92.5	75.0	69.0	57.0
250	880	N5009	241	1460	206	110	220	94.5	94.1	92.5	82.2	77.0	67.0
	705	N5009	264	1460	258	110	210	94.5	94.1	92.5	75.0	69.0	57.0
300	3560	N5009	259	1770	61	90	200	95.5	95.0	93.5	91.0	89.5	85.0
	1770	N5009	272	1770	123	100	200	95.5	95.0	93.5	86.5	82.5	76.0
	1175	N5009	281	1770	186	110	210	95.2	94.8	93.0	84.0	79.5	72.0
	880	N5009	289	1750	248	110	220	94.5	94.1	92.5	82.2	77.0	67.0
	705	N5009	317	1750	309	100	210	94.5	94.1	92.5	75.0	69.0	57.0
350	3560	N5009	302	2070	71	90	200	95.5	95.0	93.5	91.0	89.5	85.0
	1770	N5009	316	2050	144	100	200	95.5	95.0	93.5	87.0	83.0	76.5
	1175	N5009	328	2050	216	100	200	95.2	94.8	93.0	84.0	79.5	72.0
	885	N5808	330	2020	287	100	210	95.2	94.8	93.0	83.5	79.0	70.0
	710	N5808	361	2020	358	100	200	95.0	94.5	93.0	76.5	71.0	59.0
400	3560	N5009	345	2350	82	90	210	95.5	95.0	93.5	91.0	89.5	85.0
	1770	N5009	361	2350	164	100	210	95.5	95.0	93.5	87.0	83.0	76.5
	1175	N5009	366	2310	247	100	210	95.2	94.8	93.0	86.0	82.0	74.0
	885	N5808	375	2280	328	100	210	95.2	94.8	93.0	84.0	79.5	71.0
	710	N5810	409	2280	409	100	200	95.2	94.8	93.0	77.0	71.5	59.5
450	3560	N5808	387	2650	92	90	210	95.8	95.5	94.0	91.0	89.5	85.0
	1770	N5009	409	2650	185	100	210	95.8	95.5	94.0	86.0	82.0	75.5
	1175	N5011	413	2610	278	100	210	95.5	95.0	93.5	85.5	81.5	73.5
	885	N5810	420	2550	369	100	210	95.5	95.0	93.5	84.0	79.5	71.0
	710	N6310	453	2550	461	100	200	95.5	95.0	93.5	78.0	72.0	60.0
500	3560	N5808	430	2930	102	90	200	95.8	95.5	94.0	91.0	89.5	85.0
	1770	N5011	452	2930	205	100	210	95.8	95.5	94.0	86.5	82.5	76.0
	1180	N5808	461	2900	308	100	210	95.5	95.0	93.5	85.0	81.0	73.0
	885	N5810	467	2850	411	100	210	95.5	95.0	93.5	84.0	79.5	71.0
	710	N6310	503	2850	512	100	200	95.5	95.0	93.5	78.0	72.0	60.0
600	3560	N5808	516	3520	122	90	210	95.8	95.5	94.0	91.0	89.5	85.0
	1775	N5808	541	3520	246	100	200	96.0	95.7	94.2	86.5	82.5	75.5
	1180	N5810	552	3450	369	100	210	95.8	95.5	94.0	85.0	81.0	73.0
	885	N6310	555	3400	493	100	210	95.8	95.5	94.0	84.5	81.5	73.0
	710	N6310	600	3400	614	100	200	95.5	95.0	93.5	78.5	72.5	60.5
700	3560	N5810	600	4100	143	90	210	96.0	95.7	94.2	91.0	89.5	85.0
	1775	N5810	619	4050	287	100	210	96.2	96.0	95.0	88.0	84.0	78.0
	1180	N6310	628	3960	431	100	210	96.0	95.7	94.2	87.0	83.0	77.0
800	1780	N5810	704	4580	327	90	200	96.2	96.0	95.0	88.5	84.5	78.5
	1180	N6310	718	4530	493	90	210	96.0	95.7	94.2	87.0	83.0	77.0
900	1780	N6310	779	5070	367	90	200	96.2	96.0	95.0	90.0	87.5	80.0

Note:

- Above data are typical values and for reference only.
- (a) For motor 500HP and smaller; performance test per ANSI/IEEE standard 112 method B with reduced voltage starting characteristics.
(b) For motor above 500HP; performance test per ANSI/IEEE standard 112 method F1 with reduced voltage starting characteristics.

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PERFORMANCE DATA

OUTPUT HP	FULL LOAD RPM	FRAME SIZE	CURRENT		TORQUE			EFFICIENCY			POWER FACTOR		
			FULL LOAD (A)	LOCKED ROTOR (A)	FULL LOAD (kg-m)	LOCKED ROTOR (%)	BREAK DOWN (%)	FULL LOAD (%)	3 / 4 LOAD (%)	1 / 2 LOAD (%)	FULL LOAD (%)	3 / 4 LOAD (%)	1 / 2 LOAD (%)
150	880	N5009	40.1	240	124	100	200	93.5	93.0	91.0	75.0	68.0	56.0
	705	N5009	40.9	240	155	100	210	93.5	93.0	91.0	73.5	65.5	54.0
175	880	N5009	46.5	285	144	100	200	94.0	93.2	91.2	75.0	68.0	56.0
	705	N5009	47.4	285	180	100	210	94.0	93.2	91.0	73.5	65.5	54.0
200	3550	N5009	43.8	300	40.9	100	200	95.0	94.6	93.2	90.0	87.5	82.0
	1775	N5009	47.5	300	81.9	100	210	95.0	94.6	93.2	83.0	80.0	72.0
	1180	N5009	50.5	300	123	100	210	95.0	94.5	93.0	78.0	73.0	64.0
	880	N5009	53.1	305	165	100	220	94.0	93.2	91.0	75.0	68.0	56.5
	705	N5011	53.8	305	206	100	210	94.0	93.2	91.0	74.0	66.0	54.5
250	3550	N5009	54.8	380	51.2	100	200	95.0	94.6	93.2	90.0	87.5	82.0
	1775	N5009	59.0	380	102	100	210	95.0	94.6	93.2	83.5	80.5	72.5
	1180	N5009	62.4	380	154	100	200	95.0	94.5	93.0	79.0	74.0	65.0
	880	N5009	65.8	390	206	100	220	94.2	93.8	92.0	75.5	69.0	57.0
	705	N5808	66.7	390	258	100	210	94.2	93.8	92.0	74.5	67.0	55.5
300	3550	N5009	65.6	460	61.4	90	200	95.2	94.8	93.5	90.0	87.5	82.0
	1775	N5009	70.3	455	123	100	200	95.2	94.8	93.5	84.0	81.0	73.0
	1180	N5009	73.9	455	185	100	200	95.0	94.5	93.0	80.0	75.0	66.0
	880	N5011	78.0	455	248	100	210	94.2	93.8	92.0	76.5	70.0	58.0
	705	N5808	80.1	455	309	100	210	94.2	93.8	92.0	74.5	67.5	55.5
350	3550	N5009	76.5	530	71.6	90	200	95.2	94.8	93.5	90.0	87.5	82.0
	1775	N5009	81.5	530	143	100	200	95.2	94.8	93.5	84.5	81.5	73.5
	1180	N5011	86.6	530	216	100	200	95.2	94.8	93.5	79.5	74.5	65.5
	885	N5808	88.5	530	287	100	220	95.0	94.5	93.2	78.0	73.0	62.5
	708	N6310	89.6	530	359	100	200	95.0	94.5	93.2	77.0	72.0	61.0
400	3550	N5808	86.7	600	81.9	90	200	95.5	95.0	94.0	90.5	88.0	83.0
	1775	N5011	92.3	600	164	100	200	95.5	95.0	94.0	85.0	82.0	74.0
	1180	N5011	99.0	600	246	100	200	95.2	94.8	93.5	79.5	74.5	65.5
	885	N5810	101	600	328	100	220	95.0	94.5	93.2	78.0	73.0	62.5
	708	N6310	102	600	411	100	210	95.0	94.5	93.2	77.0	72.0	61.0
450	3550	N5808	97.5	675	92.1	90	200	95.5	95.0	94.0	90.5	88.0	83.0
	1775	N5011	104	670	184	100	200	95.5	95.0	94.0	84.5	81.5	73.5
	1180	N5808	108	670	277	100	200	95.5	95.0	94.0	81.5	77.5	70.0
	885	N5810	113	670	369	100	220	95.2	94.8	93.5	78.5	73.5	63.5
	708	N6310	115	670	462	100	210	95.0	94.5	93.2	77.0	72.0	61.0
500	3550	N5808	108	750	102	90	200	95.5	95.0	94.0	90.5	88.0	83.0
	1775	N5011	115	750	205	100	200	95.5	95.0	94.0	85.0	82.0	74.0
	1180	N5808	120	750	308	100	200	95.5	95.0	94.0	81.5	77.5	70.0
	885	N6310	124	740	411	100	210	95.2	94.8	93.5	79.5	74.5	64.5
	708	N6310	127	740	513	100	210	95.0	94.5	93.5	77.5	72.5	61.5
600	3555	N5810	130	890	123	90	200	95.5	95.4	94.4	90.5	88.0	83.0
	1775	N5810	135	880	246	100	220	95.5	95.4	94.4	87.0	84.5	77.0
	1180	N5810	142	880	369	100	200	95.5	95.0	94.0	83.0	79.0	71.5
	885	N6310	146	880	493	100	210	95.5	95.0	94.0	80.5	76.0	66.5
	708	N6810	151	880	616	100	210	95.5	95.0	94.0	78.0	73.0	62.0
700	3555	N5810	152	1030	143	90	200	95.5	95.4	94.4	90.5	88.0	83.0
	1775	N5810	157	1020	287	100	200	95.5	95.4	94.4	87.5	85.0	77.5
	1180	N6310	162	1020	431	100	200	95.5	95.4	94.4	84.5	80.5	73.0
	885	N6810	167	1010	575	100	200	95.5	95.0	94.0	82.0	77.5	68.0
	710	N7808	169	1010	716	100	200	95.5	95.0	94.0	81.0	76.0	66.0

PERFORMANCE DATA

OUTPUT HP	FULL LOAD RPM	FRAME SIZE	CURRENT		TORQUE			EFFICIENCY			POWER FACTOR		
			FULL LOAD (A)	LOCKED ROTOR (A)	FULL LOAD (kg-m)	LOCKED ROTOR (%)	BREAK DOWN (%)	FULL LOAD (%)	3 / 4 LOAD (%)	1 / 2 LOAD (%)	FULL LOAD (%)	3 / 4 LOAD (%)	1 / 2 LOAD (%)
800	3560	N6310	171	1170	163	90	200	96.0	95.6	94.6	91.0	88.5	84.0
	1780	N6310	178	1160	327	100	200	96.0	95.6	94.6	87.5	85.0	77.5
	1180	N6310	186	1160	493	100	200	95.5	95.4	94.4	84.5	80.5	73.0
	885	N6810	191	1150	657	100	200	95.5	95.0	94.0	82.0	77.5	68.0
	710	N7808	194	1150	819	100	200	95.5	95.0	94.0	81.0	76.0	66.0
900	3560	N6310	193	1310	184	90	200	96.0	95.6	94.6	91.0	88.5	84.0
	1780	N6310	201	1300	367	100	200	96.0	95.6	94.6	87.5	85.0	77.5
	1185	N6810	205	1300	552	100	200	96.0	95.6	94.6	85.5	81.0	73.5
	890	N7808	209	1290	735	100	200	96.0	95.4	94.4	84.0	79.5	70.0
	710	N7808	217	1290	921	100	200	96.0	95.0	94.0	81.0	76.0	66.0
1000	3560	N6810	214	1450	204	90	200	96.2	95.8	95.0	91.0	88.5	84.0
	1780	N6810	223	1450	408	100	200	96.0	95.6	94.6	87.5	85.0	77.5
	1185	N6810	229	1450	613	100	200	96.0	95.6	94.6	85.0	81.0	73.5
	890	N7808	231	1440	816	100	200	96.0	95.4	94.4	84.5	80.0	70.5
	710	N7808	241	1440	1023	100	200	96.0	95.0	94.0	81.0	76.0	66.0
1250	1780	N6810	274	1780	510	90	200	96.0	95.8	95.0	89.0	87.0	81.0
	1185	N7808	284	1780	766	90	200	96.0	95.8	94.8	86.0	83.4	76.0
	890	N8810	285	1780	1021	90	200	96.0	95.3	94.4	85.5	81.0	71.5
	710	N8810	297	1780	1279	90	200	96.0	95.5	94.5	82.0	78.0	67.0
1500	1782	N7808	325	2120	612	90	200	96.0	96.0	95.0	90.0	88.0	82.0
	1185	N7808	337	2120	920	90	200	96.5	95.8	94.8	86.5	84.0	76.5
	890	N8810	342	2120	1225	85	200	96.0	95.6	94.5	85.5	81.5	72.0
	710	N8810	357	2120	1535	85	200	96.0	95.5	94.5	82.0	78.0	67.0
1750	1782	N7808	377	2460	714	85	200	96.0	95.6	94.5	90.5	88.5	82.5
	1188	N8810	386	2450	1070	85	200	96.5	96.0	95.0	88.0	86.5	82.2
	890	N8810	399	2450	1429	85	200	96.0	95.6	94.5	85.5	81.5	72.0
2000	1785	N8810	431	2780	814	80	200	96.0	95.6	94.5	90.5	88.5	82.5
	1188	N8810	440	2780	1223	80	200	96.5	96.0	95.0	88.2	86.8	82.5
2250	1785	N8810	480	3130	916	80	200	96.5	96.0	94.8	91.0	89.0	83.0
	1188	N8810	493	3130	1376	80	200	96.5	96.0	95.0	88.5	87.0	82.7
2500	1788	N8810	530	3440	1016	80	200	96.5	96.0	95.0	91.5	89.5	83.5

Note:

- Above data are typical values and for reference only.
- (a) For motor 500HP and smaller; performance test per ANSI/IEEE standard 112 method B with reduced voltage starting characteristics.
(b) For motor above 500HP; performance test per ANSI/IEEE standard 112 method F1 with reduced voltage starting characteristics.

ALL DATA ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

PERFORMANCE DATA

OUTPUT HP	FULL LOAD RPM	FRAME SIZE	CURRENT		TORQUE			EFFICIENCY			POWER FACTOR		
			FULL LOAD (A)	LOCKED ROTOR (A)	FULL LOAD (kg-m)	LOCKED ROTOR (%)	BREAK DOWN (%)	FULL LOAD (%)	3 / 4 LOAD (%)	1 / 2 LOAD (%)	FULL LOAD (%)	3 / 4 LOAD (%)	1 / 2 LOAD (%)
150	880	N5009	22.1	135	124	100	200	93.5	93.0	91.0	75.0	68.5	56.0
	705	N5009	22.8	135	155	100	200	93.5	93.0	91.0	73.0	65.5	54.0
175	880	N5009	25.7	160	144	100	200	94.0	93.2	91.0	75.0	68.0	56.0
	705	N5009	26.4	160	180	100	200	94.0	93.2	91.0	73.0	65.5	54.0
200	3550	N5009	24.5	170	40.9	100	200	94.0	93.5	92.0	90.0	87.5	82.0
	1775	N5009	26.5	170	81.9	100	200	94.0	93.5	91.5	83.0	80.0	72.0
	1180	N5009	28.2	170	123	100	200	94.0	93.5	92.0	78.0	73.0	64.0
	880	N5009	29.4	170	165	100	200	94.0	93.2	91.0	75.0	68.0	56.5
	705	N5011	30.0	170	206	100	200	94.0	93.2	91.0	73.5	66.0	54.5
250	3550	N5009	30.6	210	51.2	100	200	94.0	93.5	92.0	90.0	87.5	82.0
	1775	N5009	32.6	210	102	100	200	94.0	93.5	92.0	84.5	81.5	73.5
	1180	N5009	36.2	210	154	100	200	94.0	93.5	92.0	76.0	70.5	60.5
	880	N5009	36.7	210	206	100	200	94.0	93.0	91.0	75.0	68.0	56.5
	705	N5808	37.2	210	258	100	200	94.0	93.5	91.5	74.0	66.5	54.5
300	3550	N5009	36.3	250	61.4	90	200	94.5	94.0	93.0	90.5	88.0	82.5
	1775	N5009	38.4	250	123	100	200	94.5	94.0	93.0	85.5	82.5	74.5
	1180	N5009	43.0	250	185	100	200	94.5	94.0	92.5	76.5	71.5	61.5
	880	N5011	43.5	250	248	100	200	94.5	94.0	92.5	75.5	68.5	57.0
	705	N5808	44.4	250	309	100	200	94.5	94.0	92.5	74.0	66.5	54.5
350	3550	N5009	42.4	295	71.6	90	200	95.0	94.8	93.5	90.0	87.5	82.0
	1775	N5009	45.1	295	143	100	200	95.0	94.8	93.5	84.5	81.5	73.5
	1180	N5011	48.0	295	216	100	200	95.0	94.8	93.5	79.5	74.5	65.5
	885	N5808	48.9	290	287	100	200	95.0	94.5	93.2	78.0	73.0	62.5
	708	N6310	49.5	290	359	100	200	95.0	94.5	93.2	77.0	72.0	61.0
400	3550	N5808	48.2	330	81.9	90	200	95.0	95.0	94.0	90.5	88.0	83.0
	1775	N5011	51.3	330	164	100	200	95.0	95.0	94.0	85.0	82.0	74.0
	1180	N5011	54.8	330	246	100	200	95.0	94.8	93.5	79.5	74.5	65.5
	885	N5810	55.9	330	328	100	200	95.0	94.5	93.2	78.0	73.0	62.5
	708	N6310	56.6	330	411	100	200	95.0	94.5	93.2	77.0	72.0	61.0
450	3550	N5808	53.9	370	92.1	90	200	95.5	95.0	94.0	90.5	88.0	83.0
	1775	N5011	57.7	370	184	100	200	95.5	95.0	94.0	84.5	81.5	73.5
	1180	N5808	59.9	370	277	100	200	95.5	95.0	94.0	81.5	77.5	70.0
	885	N5810	62.3	370	369	100	200	95.2	94.8	93.5	78.5	73.5	63.5
	708	N6310	63.7	370	462	100	200	95.0	94.5	93.2	77.0	72.0	61.0
500	3550	N5808	59.9	415	102	90	200	95.5	95.0	94.0	90.5	88.0	83.0
	1775	N5011	63.8	415	205	100	200	95.5	95.0	94.0	85.0	82.0	74.0
	1180	N5808	66.5	415	308	100	200	95.5	95.0	94.0	81.5	77.5	70.0
	885	N6310	68.4	410	411	100	200	95.2	94.8	93.5	79.5	74.5	64.5
	708	N6310	70.3	410	513	100	200	95.0	94.5	93.2	77.5	72.5	61.5
600	3555	N5810	71.7	490	123	90	200	95.8	95.4	94.4	90.5	88.0	83.0
	1775	N5810	74.5	485	246	100	200	95.8	95.4	94.4	87.0	84.5	77.0
	1180	N5810	78.4	485	369	100	200	95.5	95.0	94.0	83.0	79.0	71.5
	885	N6310	80.8	480	493	100	200	95.5	95.0	94.0	80.5	76.0	66.5
	708	N6810	81.6	480	616	100	200	95.2	94.8	93.5	80.0	75.0	63.0
700	3555	N5810	83.6	570	143	90	200	95.8	95.4	94.4	90.5	88.0	83.0
	1775	N5810	86.5	560	287	100	200	95.8	95.4	94.4	87.5	85.0	77.5
	1180	N6310	89.5	560	431	100	200	95.8	95.4	94.4	84.5	80.5	73.0
	885	N6810	92.6	550	575	100	200	95.5	95.0	94.0	82.0	77.5	68.0
	710	N7808	93.7	550	716	100	200	95.5	95.0	94.0	81.0	76.0	66.0

PERFORMANCE DATA

OUTPUT HP	FULL LOAD RPM	FRAME SIZE	CURRENT		TORQUE			EFFICIENCY			POWER FACTOR		
			FULL LOAD (A)	LOCKED ROTOR (A)	FULL LOAD (kg-m)	LOCKED ROTOR (%)	BREAK DOWN (%)	FULL LOAD (%)	3 / 4 LOAD (%)	1 / 2 LOAD (%)	FULL LOAD (%)	3 / 4 LOAD (%)	1 / 2 LOAD (%)
800	3560	N6310	94.8	645	163	80	200	96.0	95.6	94.6	91.0	88.5	84.0
	1780	N6310	98.6	640	327	100	200	96.0	95.6	94.6	87.5	85.0	77.5
	1180	N6310	102	640	493	100	200	95.8	95.4	94.4	84.5	80.5	73.0
	885	N6810	106	630	657	100	200	95.5	95.0	94.0	82.0	77.5	68.0
	710	N7808	107	630	819	100	200	95.5	95.0	94.0	81.0	76.0	66.0
900	3560	N6310	107	730	184	80	200	96.0	95.6	94.6	91.0	88.5	84.0
	1780	N6310	111	720	367	100	200	96.0	95.6	94.6	87.5	85.0	77.5
	1185	N6810	114	720	552	100	200	96.0	95.6	94.6	85.5	81.0	73.5
	890	N7808	116	720	735	100	200	95.8	95.4	94.4	84.0	79.5	70.0
	710	N7808	120	720	921	100	200	95.5	95.0	94.0	81.0	76.0	66.0
1000	3560	N6810	119	810	204	80	200	96.0	95.8	95.0	91.0	88.5	84.0
	1780	N6810	123	805	408	100	200	96.0	95.6	94.6	87.5	85.0	77.5
	1185	N6810	126	795	613	100	200	96.0	95.6	94.6	85.5	81.0	73.5
	890	N7808	128	795	816	100	200	95.8	95.4	94.4	84.5	80.0	70.5
	710	N7808	134	795	921	100	200	95.5	95.0	94.0	81.0	76.0	66.0
1250	1780	N6810	151	980	510	80	200	96.0	95.8	95.0	89.0	87.0	81.0
	1185	N7808	156	980	766	90	200	96.0	95.8	95.0	86.5	83.5	76.5
	890	N8810	158	980	1021	90	200	95.8	95.3	94.0	85.5	81.0	71.5
	710	N8810	164	980	1279	90	200	96.0	95.5	94.5	82.0	78.0	68.0
1500	1785	N7808	179	1165	611	80	200	96.5	96.0	95.0	90.0	88.0	82.0
	1185	N7808	187	1165	920	90	200	96.0	95.8	95.0	86.5	83.5	76.5
	890	N8810	189	1165	1225	90	200	96.0	95.6	94.5	85.5	81.5	72.0
	710	N8810	197	1165	1535	90	200	96.0	95.5	94.5	82.0	78.0	68.0
1750	1785	N7808	209	1365	712	85	200	96.5	96.0	95.0	90.0	88.0	82.0
	1185	N8810	214	1365	1073	85	200	96.5	95.6	94.5	87.8	86.5	82.0
	890	N8810	221	1365	1429	85	200	96.0	95.6	94.5	85.5	81.5	72.0
2000	1785	N8810	237	1535	814	80	200	96.5	96.0	95.0	90.5	88.5	82.5
	1185	N8810	243	1535	1226	80	200	96.5	95.8	94.5	88.2	86.8	82.3
2250	1785	N8810	265	1730	916	80	200	96.5	96.0	95.0	91.0	89.0	83.0
	1185	N8810	273	1730	1380	80	200	96.5	96.0	95.0	88.5	87.0	82.8
2500	1788	N8810	295	1900	1016	80	200	96.5	96.0	95.0	91.0	89.0	83.0

Note:

- Above data are typical values and for reference only.
- (a) For motor 500HP and smaller; performance test per ANSI/IEEE standard 112 method B with reduced voltage starting characteristics.
(b) For motor above 500HP; performance test per ANSI/IEEE standard 112 method F1 with reduced voltage starting characteristics.

ALL DATA ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

PERFORMANCE DATA

OUTPUT HP	FULL LOAD RPM	FRAME SIZE	CURRENT		TORQUE			EFFICIENCY			POWER FACTOR		
			FULL LOAD (A)	LOCKED ROTOR (A)	FULL LOAD (kg-m)	LOCKED ROTOR (%)	BREAK DOWN (%)	FULL LOAD (%)	3 / 4 LOAD (%)	1 / 2 LOAD (%)	FULL LOAD (%)	3 / 4 LOAD (%)	1 / 2 LOAD (%)
200	3550	N5009	15.5	110	54.9	100	200	93.5	93.0	91.5	90.0	87.5	82.0
	1775	N5009	16.5	110	109.7	100	200	94.0	93.5	92.5	84.0	81.0	73.0
	1180	N5009	17.8	110	165	100	200	94.0	93.5	92.0	78.0	73.0	63.0
	880	N5808	18.9	110	221	100	200	93.5	92.0	90.0	74.0	68.0	54.0
	705	N5808	19.3	110	276	100	200	93.5	93.0	91.0	72.5	65.0	53.0
250	3550	N5009	19.3	135	68.6	100	200	93.8	93.2	91.8	90.0	87.5	82.0
	1775	N5009	20.5	135	137	100	200	94.0	93.5	92.5	84.5	81.5	73.5
	1180	N5009	22.3	135	206	100	200	94.0	93.5	92.0	78.0	73.0	63.0
	880	N5808	23.6	135	277	100	200	93.5	92.2	90.0	74.0	69.0	56.0
	705	N5810	23.9	135	345	100	200	93.5	93.0	91.0	73.0	65.5	53.5
300	3550	N5009	23.1	160	82.3	100	200	94.2	93.8	92.5	90.0	87.5	82.0
	1775	N5009	24.5	160	165	100	200	94.0	93.5	92.5	85.0	82.0	74.0
	1180	N5011	26.6	160	248	100	200	94.5	93.5	92.0	78.0	73.0	63.0
	880	N5810	27.8	160	332	100	200	94.0	93.5	92.0	75.0	70.0	57.0
	708	N6310	28.1	160	413	100	200	94.0	93.5	92.0	74.0	66.5	54.5
350	3550	N5808	26.9	190	96.0	90	200	94.5	94.0	93.0	90.0	87.5	82.0
	1775	N5011	28.8	190	192	100	200	94.5	94.0	93.0	84.0	81.0	73.0
	1180	N5810	29.5	185	289	100	200	95.0	94.0	93.0	81.5	78.5	70.0
	880	N5810	32.0	185	387	100	200	94.0	93.7	92.2	76.0	71.0	58.0
	708	N6310	32.6	185	481	100	200	94.0	93.7	92.2	74.5	67.5	55.5
400	3550	N5808	30.7	215	109.7	90	200	94.5	94.0	93.0	90.0	87.5	82.0
	1775	N5011	32.7	210	219	100	200	94.5	94.0	93.0	84.5	81.5	73.5
	1180	N5810	33.5	210	330	100	200	95.0	94.0	93.0	82.0	79.0	70.5
	885	N6310	36.3	210	440	100	200	94.0	93.7	92.2	76.5	71.5	58.5
	708	N6310	37.0	210	550	100	200	94.0	93.7	92.2	75.0	68.0	56.0
450	3550	N5810	34.2	240	123.5	90	200	95.0	94.5	93.0	90.5	88.0	83.0
	1780	N5810	35.7	230	246	100	200	95.0	94.4	93.0	86.5	83.5	76.0
	1180	N5810	37.7	230	371	100	200	95.0	94.0	93.0	82.0	79.0	70.5
	885	N6310	40.6	230	495	100	200	94.5	94.0	92.5	76.5	71.5	58.5
	710	N6810	39.8	230	617	100	200	94.5	94.0	92.5	78.0	71.0	60.0
500	3550	N5810	38.0	265	137	90	200	94.8	94.4	93.0	90.5	88.0	83.0
	1780	N5810	39.7	260	274	100	200	95.0	94.4	93.0	86.5	83.5	76.0
	1180	N5810	41.9	260	413	100	200	95.0	94.5	93.5	82.0	79.0	70.5
	885	N6310	43.2	260	550	100	200	94.5	94.0	92.5	80.0	75.0	65.0
	710	N6810	44.3	260	686	100	200	94.5	94.0	92.5	78.0	72.0	60.0
600	3560	N6310	45.1	315	164	90	200	95.5	95.0	94.0	91.0	88.5	84.0
	1780	N5810	47.1	305	328	100	200	95.0	95.0	93.5	87.5	84.5	77.0
	1185	N6310	48.5	305	493	100	200	95.0	95.0	93.5	85.0	81.0	72.0
	885	N6810	49.7	305	660	100	200	95.0	94.4	93.0	83.0	78.0	68.0
	710	N7808	51.5	305	823	100	200	95.0	94.4	93.0	80.0	74.0	62.0
700	3560	N6810	52.6	360	192	90	200	95.5	95.0	94.0	91.0	88.5	84.0
	1780	N6310	54.8	355	383	100	200	95.2	94.8	94.0	87.5	84.5	77.0
	1185	N6810	55.8	350	575	100	200	95.2	94.8	94.0	86.0	82.0	74.0
	890	N7808	57.8	350	766	100	200	95.2	94.8	94.0	83.0	78.0	68.0
	710	N7808	60.1	350	960	100	200	95.0	94.4	93.0	80.0	74.0	62.0
800	3560	N6810	60.1	410	219	90	200	95.5	95.0	94.0	91.0	88.5	84.0
	1785	N6810	62.5	405	437	100	200	95.5	95.0	94.0	87.5	84.0	77.0
	1185	N6810	63.8	405	658	100	200	95.2	94.8	94.0	86.0	82.0	74.0
	890	N7808	64.5	400	876	100	200	95.2	94.8	94.0	85.0	80.0	70.0
	710	N7808	68.7	400	1097	100	200	95.0	94.5	94.0	80.0	74.0	62.0

PERFORMANCE DATA

OUTPUT HP	FULL LOAD RPM	FRAME SIZE	CURRENT		TORQUE			EFFICIENCY			POWER FACTOR		
			FULL LOAD (A)	LOCKED ROTOR (A)	FULL LOAD (kg-m)	LOCKED ROTOR (%)	BREAK DOWN (%)	FULL LOAD (%)	3 / 4 LOAD (%)	1 / 2 LOAD (%)	FULL LOAD (%)	3 / 4 LOAD (%)	1 / 2 LOAD (%)
900	3560	N6810	67.6	460	246	90	200	95.5	95.0	94.2	91.0	88.5	84.0
	1785	N6810	69.9	455	491	90	200	95.5	95.0	94.2	88.0	85.0	78.0
	1185	N7808	71.5	450	740	100	200	95.5	95.0	94.2	86.0	82.0	74.0
	890	N7808	72.4	450	985	100	200	95.5	94.8	94.0	85.0	80.0	70.0
	710	N8810	75.9	450	1235	100	200	95.5	94.5	94.0	81.0	75.0	65.0
1000	1785	N6810	77.2	500	546	90	200	95.5	95.0	94.2	88.5	85.5	78.5
	1185	N7808	79.5	500	822	90	200	95.5	95.0	94.2	86.0	82.0	74.0
	890	N7808	80.4	490	1094	90	200	95.5	94.8	94.0	85.0	80.0	70.0
	710	N8810	84.4	490	1372	90	200	95.5	95.0	94.0	81.0	75.0	65.0
1250	1785	N7808	95.7	620	682	90	200	95.8	95.3	94.5	89.0	86.0	79.0
	1185	N8810	99.3	620	1027	90	200	95.5	95.0	94.2	86.0	82.0	74.0
	890	N8810	100	620	1368	90	200	95.5	95.0	94.5	85.5	80.5	70.5
	710	N8810	105	620	1715	90	200	95.5	95.0	94.0	81.0	75.0	65.0
1500	1785	N7808	115	750	818	90	200	95.8	95.5	94.5	89.0	86.0	79.0
	1185	N8810	119	750	1233	90	200	96.0	95.5	94.5	86.0	82.0	74.0
	890	N8810	120	750	1642	90	200	95.5	95.0	94.5	85.5	80.5	70.5
1750	1785	N8810	131	860	955	80	200	96.5	96.0	95.0	90.0	87.0	80.0
	1185	N8810	138	860	1438	80	200	96.0	95.5	95.0	86.5	82.5	74.5
2000	1785	N8810	150	980	1091	80	200	96.5	96.0	95.0	90.0	87.0	80.0
2250	1785	N8810	169	980	1228	80	200	96.5	96.0	95.0	90.0	87.0	80.0

Note:

- Above data are typical values and for reference only.
- (a) For motor 500HP and smaller; performance test per ANSI/IEEE standard 112 method B with reduced voltage starting characteristics.
(b) For motor above 500HP; performance test per ANSI/IEEE standard 112 method F1 with reduced voltage starting characteristics.

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OUTLINE DRAWING AND DIMENSION SHEET

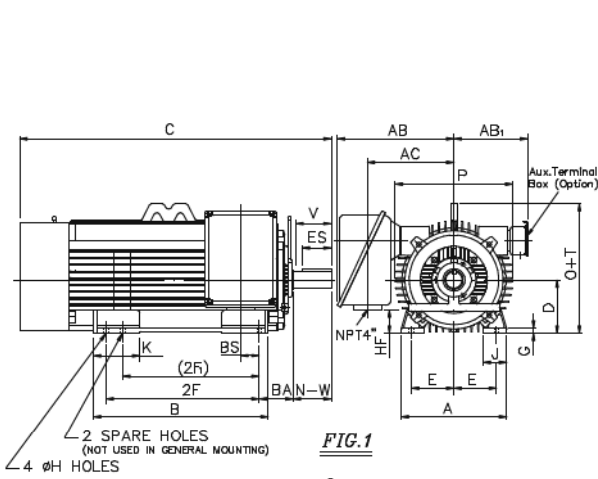
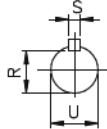


FIG. 1



SHAFT END DIMENSIONS

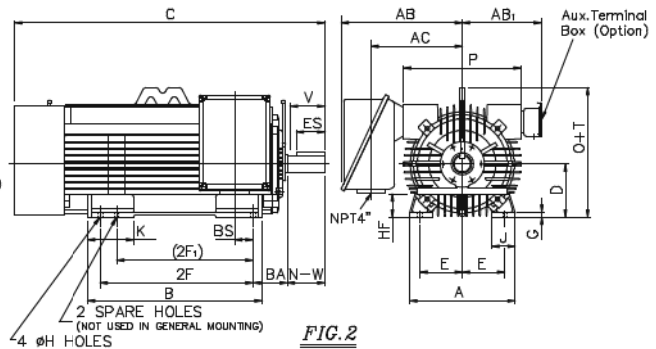


FIG. 2

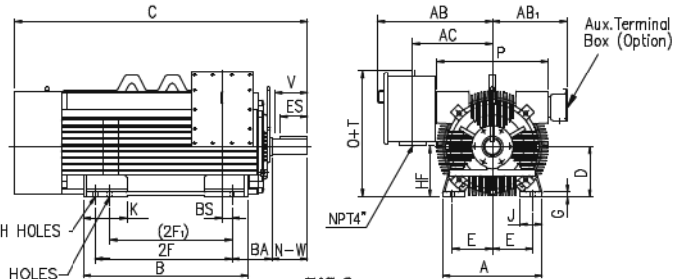


FIG. 3

FRAME NO.	POLES	FIG. NO.	A	B	C ⁶⁾	D	E	2F	(2F ₁)	G	H	J	K	O+T	P	AB
N5009	2	1	24.8	33.86	69.9	12.5	10.0	28.0	22.0	1.06	1.1	5.51	10.24	30.4	27.8	27.8
	4~10	1	24.8	33.86	67.4	12.5	10.0	28.0	22.0	1.06	1.1	5.51	10.24	30.4	27.8	27.8
N5011	4~10	1	24.8	41.85	75.2	12.5	10.0	36.0	32.0	1.06	1.1	5.51	10.24	30.4	27.8	27.8
N5808	2	1	28.0	33.86	78.6	14.5	11.5	28.0	25.0	1.54	1.1	6.30	10.24	34.2	32.3	29.8
	4~10	1	28.0	33.86	73.3	14.5	11.5	28.0	25.0	1.54	1.1	6.30	10.24	34.2	32.3	29.8
N5810	2	1	28.0	41.85	86.1	14.5	11.5	36.0	32.0	1.54	1.1	6.30	10.24	34.2	32.3	29.8
	4~10	1	28.0	41.85	80.7	14.5	11.5	36.0	32.0	1.54	1.1	6.30	10.24	34.2	32.3	29.8
N6310	2	2	31.5	47.24	85.5	15.75	13.5	40.0	32.0	1.57	1.38	6.50	13.90	37.0	35.5	33.1
	4~10	2	31.5	47.24	80.7	15.75	13.5	40.0	32.0	1.57	1.38	6.50	13.90	37.0	35.5	33.1
N6810	2	2	33.9	53.54	92.0	17.0	13.5	45.0	36.0	1.57	1.38	6.50	15.59	39.4	37.8	34.3
	4~10	2	33.9	53.54	90.2	17.0	13.5	45.0	36.0	1.57	1.38	6.50	15.59	39.4	37.8	34.3
N7808	4~10 ⁹⁾	3	40.2	57.87	98.5	19.7	16.75	49.2	39.4	1.77	1.65	8.27	16.73	46.8	41.8	40.3
N7808	4~10 ¹⁰⁾	3	40.2	57.87	98.5	19.7	16.75	49.2	39.4	1.77	1.65	8.27	16.73	47.4	41.8	40.7
N8810	4 ⁹⁾	3	44.1	63.78	105.2	22.05	18.7	55.13	/	1.97	1.89	9.45	17.32	50.7	47.7	43.2
N8810	4 ¹⁰⁾	3	44.1	63.78	105.2	22.05	18.7	55.13	/	1.97	1.89	9.45	17.32	51.3	47.7	43.6
N8810	6~10 ⁹⁾	3	44.1	63.78	107.1	22.05	18.7	55.13	/	1.97	1.89	9.45	17.32	50.7	47.7	43.2
N8810	6~10 ¹⁰⁾	3	44.1	63.78	107.1	22.05	18.7	55.13	/	1.97	1.89	9.45	17.32	51.3	47.7	43.6

FRAME NO.	POLES	FIG. NO.	SHAFT END											BEARING		APPROX. WEIGHT (LBS)
			AB ₁	AC	BA	BS	HF	U	N-W	ES	S	R	V ⁴⁾	D.E.	N.D.E.	
N5009	2	1	18.2	20.87	8.5	0.83	4.8	2.625	5.50	4.75	0.625	2.275	5.3	6315C3	6315C3	4405
	4~10	1	18.2	20.87	8.5	0.83	4.8	3.750	6.70	5.50	0.875	3.261	6.5	6222	6222	4405
N5011	4~10	1	18.2	20.87	8.5	0.53	4.8	3.750	6.70	5.50	0.875	3.261	6.5	6222	6222	5070
	2	1	20.3	22.84	10.0	-0.39	8.35	2.875	5.50	4.75	0.750	2.450	5.3	6218C3	6218C3	5400
N5808	4~10	1	20.3	22.84	10.0	-0.39	8.35	4.375	8.30	6.70	1.0	3.817	8.1	6224C3	6224C3	5400
	2	1	20.3	22.84	10.0	-0.37	8.35	2.875	5.50	4.75	0.750	2.450	5.3	6218C3	6218C3	6600
N5810	4~10	1	20.3	22.84	10.0	-0.37	8.35	4.375	8.30	6.70	1.0	3.817	8.1	6224C3	6224C3	6600
	2	2	23.4	26.10	11.0	0.71	12.28	3.125	6.70	5.50	0.75	2.704	6.5	6218C3	6218C3	9250
N6310	4~10	2	23.4	26.10	11.0	0.71	12.28	4.375	8.30	6.70	1.0	3.817	8.1	6224C3	6224C3	9250
	2	2	24.6	27.28	11.5	1.24	15.43	3.375	6.70	5.50	0.875	2.880	6.5	6221C3 ⁸⁾	6221C3 ⁸⁾	11455
N6810	4~10	2	24.6	27.28	11.5	1.24	15.43	4.875	8.30	6.70	1.25	4.169	8.1	6226C3	6224C3	11455
	4~10 ⁹⁾	3	26.6	31.81	13.19	2.76	18.86	5.0	9.85	8.66	1.25	4.296	9.6	6230C3	6324C3	14100
N7808	4~10 ¹⁰⁾	3	26.6	31.81	13.19	2.76	15.32	5.0	9.85	8.66	1.25	4.296	9.6	6230C3	6324C3	14100
N8810	4 ⁹⁾	3	29.5	34.76	13.98	3.94	22.80	5.0	9.85	8.66	1.25	4.296	9.6	NU228C3+6228C3	NU228C3	18700
	4 ¹⁰⁾	3	29.5	34.76	13.98	3.94	19.25	5.0	9.85	8.66	1.25	4.296	9.6	NU228C3+6228C3	NU228C3	18700
N8810	6~10 ⁹⁾	3	29.5	34.76	13.98	3.94	22.80	6.30	11.81	9.84	1.50	5.459	11.6	NU1034C3+6034C3	NU228C3	18700
	6~10 ¹⁰⁾	3	29.5	34.76	13.98	3.94	19.25	6.30	11.81	9.84	1.50	5.459	11.6	NU1034C3+6034C3	NU228C3	18700

Note:

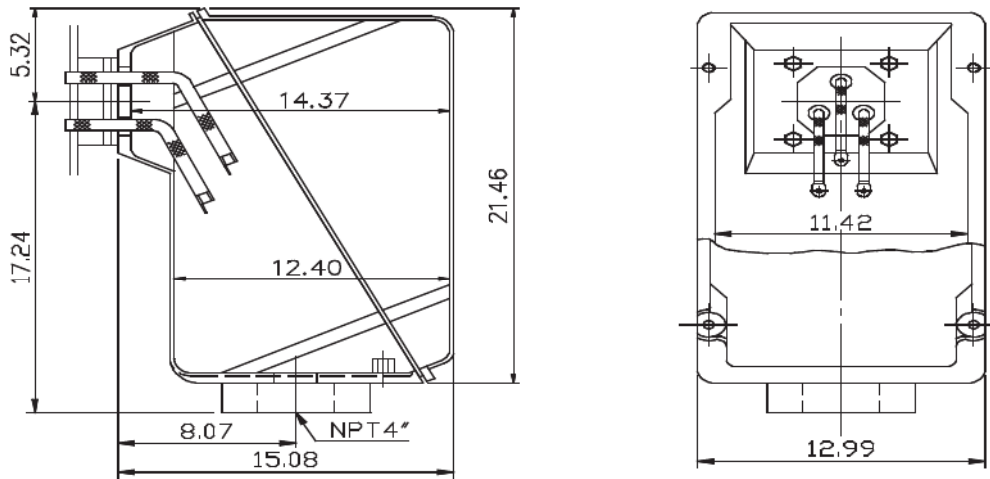
- 1) Dimension D tolerance : +0.00 inch ~ -0.06 inch.
- 2) Dimension U tolerance : +0.00 inch ~ -0.001 inch.
- 3) Dimension R tolerance : +0.00 inch ~ -0.015 inch.
- 4) Dimension V = Length of shaft available for coupling.
- 5) Dimensions A, B, C, G, AB, AB₁, O+T, HF are approximate values.

- 6) For direct coupled. Data for belt drive on request.
- 7) C dimension may be extended to meet low noise level.
- 8) Oil lubricated.
- 9) For 4160 volt and below.
- 10) For 6000 volt and above.

Unit: inches

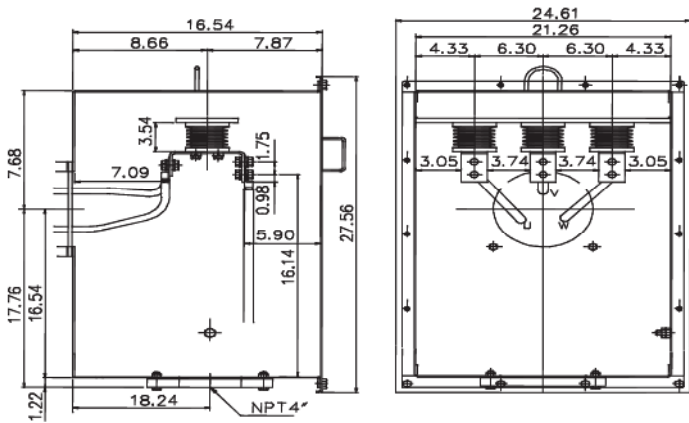
MAIN TERMINAL BOX CONSTRUCTION

FRAME NO.5009~6810



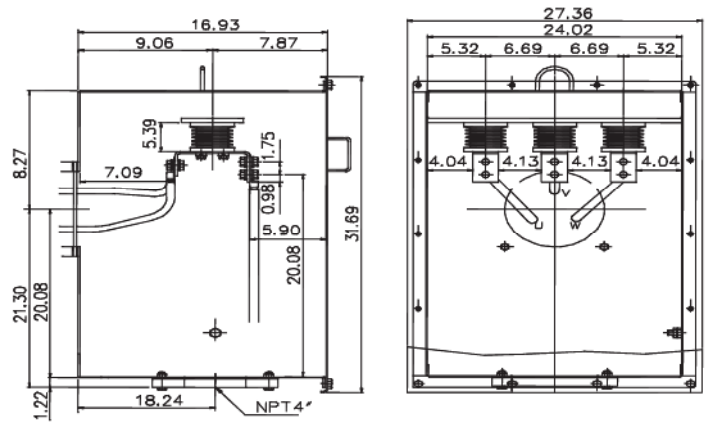
CAST IRON TERMINAL BOX

FRAME NO.7808~8810 (4160 VOLT AND BELOW)



FABRICATED STEEL TERMINAL BOX WITH INSULATOR

FRAME NO.7808~8810 (6000 ~ 6600 VOLT)



FABRICATED STEEL TERMINAL BOX WITH INSULATOR



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