

Nidec

All for dreams



CAplus
Totally Enclosed Fan Cooled motor

INDUSTRIAL SOLUTIONS

DRIVE CENTRE 
Industrial Automation Systems Integrators

57 Galaxy Blvd., Units 1 & 2, Toronto, ON M9W 5P1
TEL: (416) 231-6767
www.drivecentre.ca

*Best in class
for power to mass*



Table of content

- Introduction 3
- Construction details 4
- Receiving and Handling 6
- Quadratic Torque applications ... 7
- Electrical Data 8
- Bearing25
- Terminal boxes 26
- Dimensions 30
- Ordering information 32

The CAplus is the new generation of Nidec ASI's Totally Enclosed Fan Cooled motors. Developed for heavy-duty industrial applications, where the motors work continually and energy efficiency is a consideration, this robust machine offers excellent performance and meets the rigorous specifications of API 541 V Edition and stringent customer requirements like SHELL Dep.

The result is a top of the class motor with great mechanical strength and outstanding dissipation offering higher levels of reliability and energy efficiency. All features that come standard.

**One of the first
MV motor to comply
with IE4 efficiency
standards**



Construction details

1. Frame
The frame of the CAplus is made of fabricated steel and ensures maximum heat dissipation thanks to the fins that contribute to increase the dissipation area.

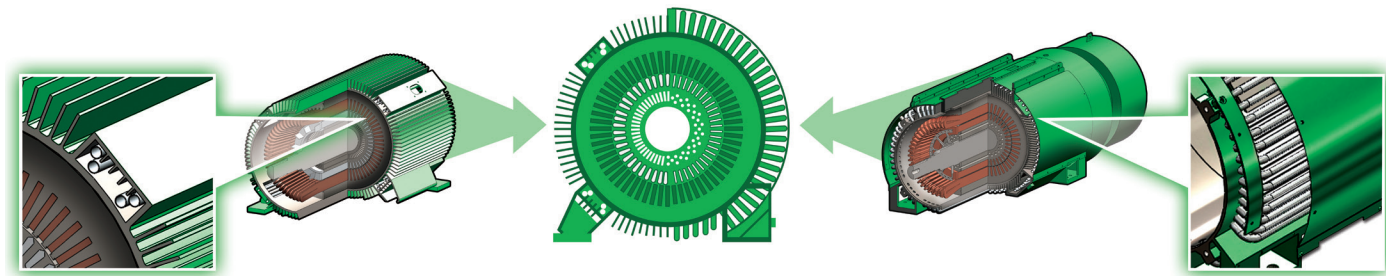
2. Feet
The motors has a horizontal mounting arrangement (IM 1001). Integrated in the frame, the feet are designed to provide high strength and stiffness.

3. Cooling System
The innovative cooling solution, defined as Enhanced IC411, consists of a row of aluminum pipes running parallel to the fins covered by a robust steel plate that forces the air to the drive end of the motor in a constant flow that increases the heat transfer.

4. Stator Windings
Like all of our machines, the CAplus uses our Micasystem® insulation which offers class F protection.

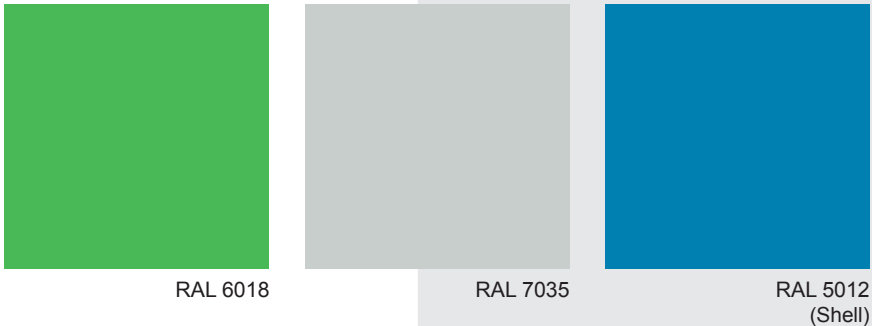
5. Fan Cover
The fan cover is made of steel plates covered by an iron wire mesh. Using lateral air intake, the motor can be placed against the wall, offering more flexibility in layout.

6. Protection and painting
The machine undergoes our standard aggressive environment painting cycle which was specifically studied for harsh environments and is able to resist even the most abrasive environments. The machine is IP55.



Standard Cooling System

Enhanced Cooling System



Paints

Standard colours are are RAL 6018 Green, RAL 7035 Grey and RAL 5012 Blue.

Components

- Two-component Epoxy-Polyamide Primer with Zinc Phosphate corrosion preventing fillers
- Two-component High Build Epoxy Polyamide Intermediate

Protective action of each coat

- The two-component anti-rust epoxy-polyamide primer adheres well to steel and iron surface and inhibits oxidation. This coat prevents corrosion of parts during storage, machining and assembly operations.
- The two-component epoxy-polyamide intermediate provides a high-build coat, which is mechanically resistant and suitable to protect both the primed parts and machined areas.
- The two-component acryl-polyurethane finish provides a hard final coat, highly resistant to abrasion, chemicals and weathering.

Receiving and Handling the CAplus

Receiving

During transportation the shaft is locked to prevent damage to the bearings. For long distance shipping, CAplus motors are palletized and packed in a wooden

box equipped with coupled barrier and dehydrating salts. Item Identification is furnished on the packing list.



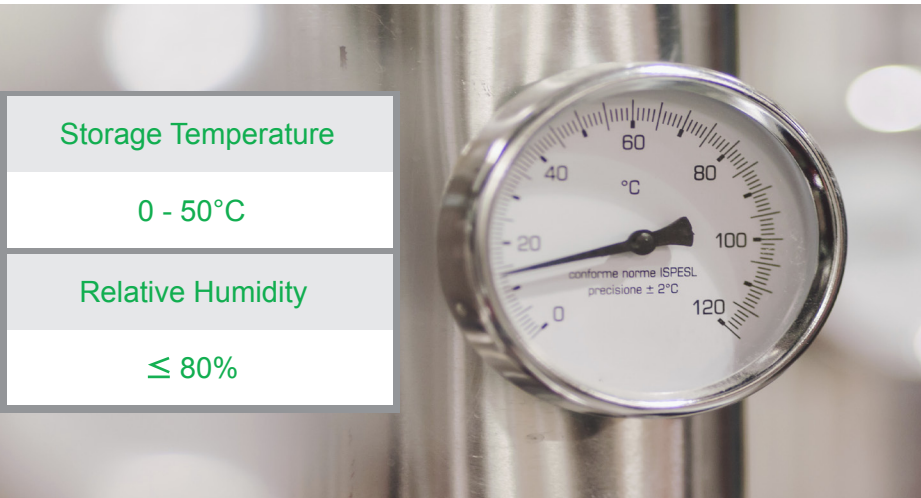
Unpacking and Storage

If the motor has been exposed to low temperatures, unpack it only after it has reached room temperature. Otherwise the motor windings will be exposed to condensing moisture. If the motor will not be put into service immediately, cover it and place it in a clean, dry location. During storage, make sure windings are protected from excessive moisture by a safe and reliable method of heating, such

as space heaters, to keep the temperature of windings above the room temperature of the surrounding air. Inspect the motor in storage at periodic intervals.

Mounting

CAplus motors have an horizontal mounting arrangement. Mount motors securely on a firm, flat base. Use the mounting holes to tighten the motor to the base. (See page 31 for details)



Handling

CAplus motors are provided with four lifting eyebolts (two on the front and two on the back - see Figure 1). Use all eyebolt simultaneously to lift the motor (see Figure 2). In case of installation on a skid, do not use the eyebolts of the motor to lift the base once the motor is attached to the skid. CAplus motors can be placed against a wall but make sure that there is a minimum clearance around the motor to allow normal air flow (see Figure 3). CAplus marked with ATEX classification are suitable for hazardous location.

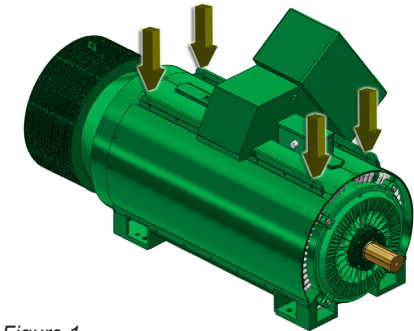


Figure 1

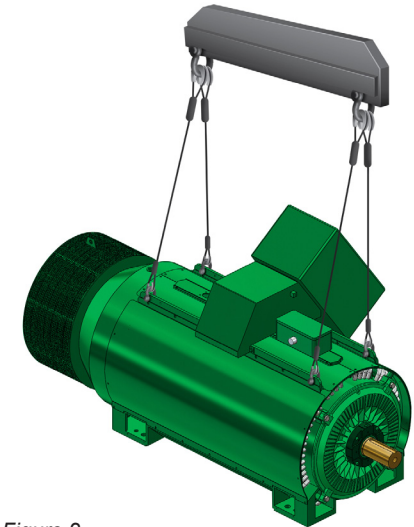


Figure 2

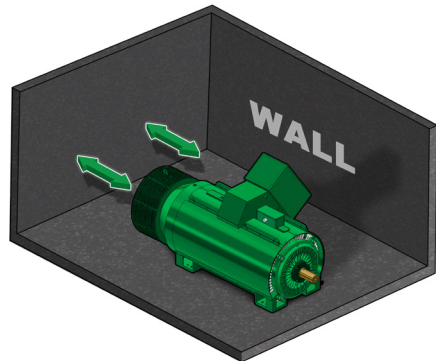


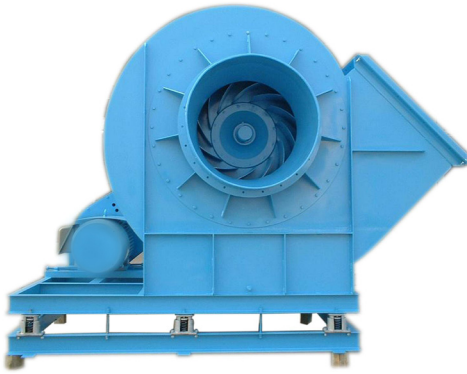
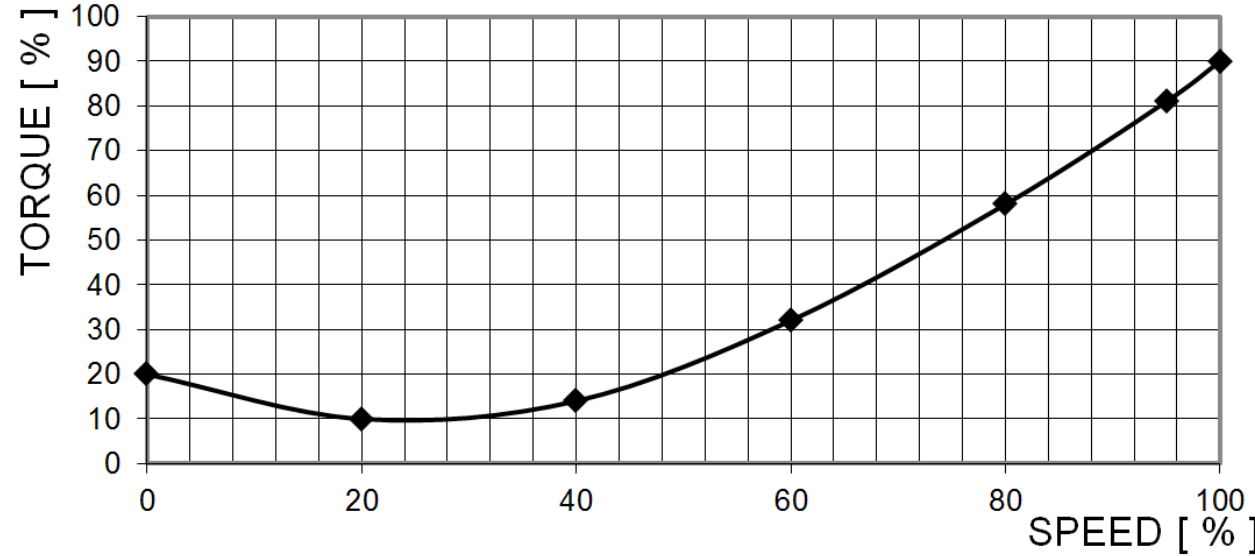
Figure 3

CAplus is specifically designed for applications with quadratic torque loads like centrifugal pumps / compressors and fans in which the torque to be supplied by the motor is proportional to the square of its speed.

SPEED %	TORQUE %
0	20
20	10
40	14
60	32
80	58
95	81
100	90



REFERENCE
“LOAD TORQUE vs. SPEED DIAGRAM”



Product ID	MOTOR TYPE		RATINGS				EFFICIENCY	POWER FACTOR	LRC	NOISE	MOTOR MASS	BRG.S CODE		ROTOR
			PN	n	TN	IN	4/4	4/4						
			kW	rpm	Nm	A	%	-				%	dBA	
2 POLE														
I01	315	L	250	2977	802	26	95,6	0,89	600	81	2380	RG	RG	CU
I02	315	L	280	2978	898	28	95,7	0,90	600	81	2400	RG	RG	CU
I03	315	L	315	2978	1010	32	95,7	0,90	650	81	2420	RG	RG	CU
I04	315	L	355	2979	1138	36	96,0	0,90	650	81	2450	RG	RG	CU
I05	315	L	400	2979	1282	40	96,1	0,90	600	81	2510	RG	RG	CU
I06	315	L	450	2980	1442	45	96,2	0,90	600	81	2570	RG	RG	CU
I07	355	L	500	2983	1601	50	96,4	0,90	550	82	3330	RG	RG	CU
I08	355	L	560	2984	1792	56	96,6	0,90	550	82	3460	RG	RG	CU
I09	355	L	600	2984	1920	60	96,7	0,90	550	82	3550	RG	RG	CU
I10	400	L	670	2985	2143	67	96,4	0,91	600	82	4280	RG	RG	CU
I11	400	L	750	2985	2399	75	96,6	0,91	600	82	4410	RG	RG	CU
I12	400	L	830	2985	2655	83	96,7	0,91	600	82	4620	RG	RG	CU
I13	450	L	920	2985	2943	93	96,2	0,90	600	82	5580	RG	RG	CU
I14	450	L	1030	2985	3295	103	96,4	0,91	600	82	5600	RG	RG	CU
I15	450	L	1140	2985	3647	113	96,6	0,91	600	82	5820	RG	RG	CU
I16	450	L	1260	2985	4031	125	96,8	0,91	600	82	6090	RG	RG	CU
I17	500	L	1380	2985	4415	136	96,8	0,92	600	82	7380	RG	RG	CU
I18	500	L	1500	2986	4797	147	96,9	0,92	600	82	7660	RG	RG	CU
I19	500	L	1650	2986	5277	162	97,1	0,92	600	82	8100	RG	RG	CU
4 POLE														
I20	315	L	225	1480	1452	25	94,8	0,82	550	78	2040	RG	RG	AL
I21	315	L	250	1481	1612	28	95,1	0,83	550	78	2140	RG	RG	AL
I22	315	L	280	1481	1805	31	95,4	0,83	550	78	2250	RG	RG	AL
I23	315	L	315	1482	2030	35	95,6	0,83	550	78	2360	RG	RG	AL
I24	315	L	350	1482	2255	38	95,7	0,84	600	78	2470	RG	RG	AL
I25	315	L	390	1482	2513	42	95,8	0,84	600	78	2610	RG	RG	AL
I26	355	L	420	1483	2704	44	95,7	0,87	650	80	3080	RG	RG	AL
I27	355	L	460	1483	2962	48	95,8	0,87	650	80	3160	RG	RG	AL
I28	355	L	500	1483	3220	52	96,0	0,88	650	80	3270	RG	RG	AL
I29	355	L	560	1483	3606	58	96,1	0,88	650	80	3350	RG	RG	AL
I30	400	L	720	1488	4621	75	96,6	0,87	600	78	4410	RG	RG	CU
I31	400	L	800	1488	5134	83	96,7	0,87	600	78	4620	RG	RG	CU
I32	400	L	950	1488	6097	98	96,8	0,88	600	78	4800	RG	RG	CU
I33	450	L	1120	1489	7183	113	97,0	0,89	550	81	5820	RG	RG	CU
I34	450	L	1290	1489	8273	131	97,0	0,89	550	81	6090	RG	RG	CU
I35	500	L	1450	1491	9287	147	96,9	0,89	550	81	7050	RG	RG	CU
I36	500	L	1600	1491	10247	160	97,0	0,90	550	81	7380	RG	RG	CU
I37	500	L	1800	1491	11528	180	97,0	0,90	550	81	7660	RG	RG	CU
I38	500	L	2000	1491	12809	200	97,1	0,90	550	81	8100	RG	RG	CU
I39	500	L	2200	1491	14090	220	97,2	0,90	550	81	8590	RG	RG	CU

Base Motor Includes

Accessories and Auxiliary Equipment

- RTD's (PT100) on stator windings, 6 pcs 3 or 4 wire, single type
- Space heaters (Ex e / Ex eb in case of application in hazardous areas)
- Phase insulated line terminal box
- Bearing insulation NDE only

Tests

- Routine Test

Certifications

- Ex nA / Ex ec II B

Paint/Finish

- As per NASI standard specified TDS2012.05.09.00 EN Rev 2 (ISO 12944 Category C4)
- RAL 6018 or RAL 7031

Does Not Include/To be quoted separately

Accessories and Auxiliary Equipment

- Phase segregated line terminal box
- Star point terminal box

Tests

- Witnessing of test

- Type test

Certifications

- Ex nA / Ex ec II C



Product ID	MOTOR TYPE		RATINGS				EFFICIENCY	POWER FACTOR	LRC	NOISE	MOTOR MASS	BRG.S CODE	
			PN	n	TN	IN	4/4	4/4				NDE	DE
			kW	rpm	Nm	A	%	-					
2 POLE													
A01	355	Y	560	2980	1794	56	96,6	0,91	600	82	3670	SN	SN
A02	355	Y	630	2980	2019	63	96,8	0,91	600	82	3900	SN	SN
A03	355	Y	710	2981	2274	70	96,9	0,91	600	82	4040	SN	SN
A04	355	Z	820	2982	2626	81	97,0	0,91	600	82	4320	SN	SN
A05	400	Z	920	2982	2946	90	97,1	0,92	550	82	5350	SN	SN
A06	400	Z	1030	2983	3297	101	97,2	0,92	550	82	5520	SN	SN
A07	400	Z	1140	2986	3646	111	97,3	0,92	550	82	5740	SN	SN
A08	450	Y	1250	2985	3999	124	96,8	0,91	550	82	6480	SN	SN
A09	450	Y	1400	2985	4479	139	96,8	0,91	550	82	6620	SN	SN
A10	450	Z	1600	2985	5119	159	96,9	0,91	550	82	7090	SN	SN
A11	500	Z	1730	2985	5534	170	96,8	0,92	550	82	8920	SN	SN
A12	500	Z	1860	2986	5948	180	97,0	0,93	550	82	9260	SN	SN
4 POLE													
A13	355	L	470	1487	3018	50	96,3	0,86	550	75	3560	SN	SN
A14	355	L	520	1487	3339	55	96,4	0,86	550	75	3650	SN	SN
A15	355	L	560	1488	3594	58	96,4	0,87	550	75	3780	SN	SN
A16	355	L	620	1488	3979	65	96,5	0,87	550	75	3880	SN	SN
A17	400	L	720	1488	4621	75	96,6	0,87	600	78	4510	SN	SN
A18	400	L	800	1488	5134	83	96,7	0,87	600	78	4720	SN	SN
A19	400	L	950	1488	6097	98	96,8	0,88	600	78	4900	SN	SN
A20	450	L	1120	1489	7183	113	97,0	0,89	550	81	5990	SN	SN
A21	450	L	1290	1489	8273	131	97,0	0,89	550	81	6260	SN	SN
A22	500	L	1450	1491	9287	147	96,9	0,89	550	81	7220	SN	SN
A23	500	L	1600	1491	10247	160	97,0	0,90	550	81	7550	SN	SN
A24	500	L	1800	1491	11528	180	97,0	0,90	550	81	7830	SN	SN
A25	500	L	2000	1491	12809	200	97,1	0,90	550	81	8270	SN	SN
A26	500	L	2200	1491	14090	220	97,2	0,90	550	81	8760	SN	SN

Base Motor Includes

Accessories and Auxiliary Equipment

- RTD's (PT100) on stator windings, 6pcs 3 or 4 wire, single type
- RTD's (PT100) in bearing, 2 pcs (1 RTD each bearing), 3 or 4 wire, simple type
- Space heaters (Ex e / Ex eb in case of application in hazardous areas)
- Phase insulated line terminal box
- Bearing insulation on both DE – NDE
- Provision only for BN proximitors on both DE and NDE (upon request)

Tests

- Routine test according to API 541 5th edition para. 6.3.2
- Vibration test

Certifications

- Ex nA / Ex ec II B

Paint/Finish

- As per NASI standard + C5M (ISO 12944 C5-I or C5-M)
- RAL 6018 or RAL 7031

Does Not Include/To be quoted separately

Accessories and Auxiliary Equipment

- Phase segregated terminal box
- Star point terminal box
- BN system
- Auxiliary terminal box for BN

Tests

- Complete test according to API 541 5th edition para. 6.3.5.1
- Stator Test

Certifications

- Ex nA / Ex ec II C

API 541
Fully compliant



Our Demand Performance machines were designed to meet the most stringent Oil & Gas requirements and are fully compliant with Shell DEP specifications.

Product ID	MOTOR TYPE		RATINGS				EFFICIENCY	POWER FACTOR	LRC	NOISE	MOTOR MASS	BRG.S CODE	
			PN	n	TN	IN	4/4	4/4				NDE	DE
			kW	rpm	Nm	A	%	-					
2 POLE													
S01	355	Y	560	2980	1794	56	96,6	0,91	600	82	3670	SN	SN
S02	355	Y	630	2980	2019	63	96,8	0,91	600	82	3900	SN	SN
S03	355	Y	710	2981	2274	70	96,9	0,91	600	82	4040	SN	SN
S04	355	Z	820	2982	2626	81	97,0	0,91	600	82	4320	SN	SN
S05	400	Z	920	2982	2946	90	97,1	0,92	550	82	5350	SN	SN
S06	400	Z	1030	2983	3297	101	97,2	0,92	550	82	5520	SN	SN
S07	400	Z	1140	2986	3646	111	97,3	0,92	550	82	5740	SN	SN
S08	450	Y	1250	2985	3999	124	96,8	0,91	550	82	6480	SN	SN
S09	450	Y	1400	2985	4479	139	96,8	0,91	550	82	6620	SN	SN
S10	450	Z	1600	2985	5119	159	96,9	0,91	550	82	7090	SN	SN
S11	500	Z	1730	2985	5534	170	96,8	0,92	550	82	8920	SN	SN
S12	500	Z	1860	2986	5948	180	97,0	0,93	550	82	9260	SN	SN
4 POLE													
S13	355	L	470	1487	3018	50	96,3	0,86	550	75	3560	SN	SN
S14	355	L	520	1487	3339	55	96,4	0,86	550	75	3650	SN	SN
S15	355	L	560	1488	3594	58	96,4	0,87	550	75	3780	SN	SN
S16	355	L	620	1488	3979	65	96,5	0,87	550	75	3880	SN	SN
S17	400	L	720	1488	4621	75	96,6	0,87	600	78	4510	SN	SN
S18	400	L	800	1488	5134	83	96,7	0,87	600	78	4720	SN	SN
S19	400	L	950	1488	6097	98	96,8	0,88	600	78	4900	SN	SN
S20	450	L	1120	1489	7183	113	97,0	0,89	550	81	5990	SN	SN
S21	450	L	1290	1489	8273	131	97,0	0,89	550	81	6260	SN	SN
S22	500	L	1450	1491	9287	147	96,9	0,89	550	81	7220	SN	SN
S23	500	L	1600	1491	10247	160	97,0	0,90	550	81	7550	SN	SN
S24	500	L	1800	1491	11528	180	97,0	0,90	550	81	7830	SN	SN
S25	500	L	2000	1491	12809	200	97,1	0,90	550	81	8270	SN	SN
S26	500	L	2200	1491	14090	220	97,2	0,90	550	81	8760	SN	SN

Base Motor Includes

Accessories and Auxiliary Equipment

- RTD’s (PT100) on stator windings, 6 pcs 3 or 4 wire, simple type
- RTD’s (PT100) in bearing, 2 pcs (1 RTD each bearing), 3 or 4 wire, simple type (Sleeve only)
- Space heaters
- Phase insulated line terminal box
- Bearing insulation on both DE - NDE
- Provision only for BN proximitors on sleeve bearings (upon request)

Tests

- Routine test according to SHELL DEP 33.66.05.31-Gen para. 16.5.3

Certifications

- Ex nA IIB

Paint/Finish

- As per NASI standard + C5M (ISO 12944 C5-I or C5-M)
- Standard RAL 5012

Does Not Include/To be quoted separately

Accessories and Auxiliary Equipment

- Phase segregated terminal box
- Star point terminal box

Tests

- Performance Test according to Shell DEP 33.66.05.31-Gen para. 16.5.1
- Special Tests and Sample coil test

Certifications

- Ex nA IIC



Product ID	MOTOR TYPE		RATINGS				EFFICIENCY	POWER FACTOR	LRC	NOISE	MOTOR MASS	BRG.S CODE		ROTOR
			PN	n	TN	IN	4/4	4/4				NDE	DE	
			kW	rpm	Nm	A	%	-						
2 POLE														
I01	315	S	320	3578	854	33	95,5	0,88	650	83	2000	RG	RG	CU
I02	315	S	350	3578	934	36	95,7	0,88	650	83	2050	RG	RG	CU
I03	315	S	380	3579	1014	39	95,9	0,89	650	83	2115	RG	RG	CU
I04	315	S	420	3579	1121	42	96,1	0,90	650	83	2180	RG	RG	CU
I05	355	S	450	3581	1200	48	95,6	0,86	600	85	2700	RG	RG	CU
I06	355	S	500	3582	1333	52	95,8	0,87	600	85	2790	RG	RG	CU
I07	355	S	560	3582	1493	59	96,0	0,87	600	85	2880	RG	RG	CU
I08	400	S	630	3584	1679	64	95,7	0,90	650	85	3470	RG	RG	CU
I09	400	S	710	3585	1891	71	96,0	0,91	650	85	3570	RG	RG	CU
I10	400	S	800	3585	2131	80	96,2	0,91	650	85	3690	RG	RG	CU
I11	450	S	880	3585	2344	90	95,4	0,90	600	85	4430	RG	RG	CU
I12	450	S	1000	3585	2664	102	95,6	0,90	600	85	4590	RG	RG	CU
I13	450	S	1100	3586	2929	111	95,9	0,90	600	85	4790	RG	RG	CU
4 POLE														
I14	315	L	250	1781	1340	44	95,2	0,82	650	80	2040	RG	RG	AL
I15	315	L	280	1781	1501	50	95,3	0,82	650	80	2140	RG	RG	AL
I16	315	L	315	1781	1689	56	95,5	0,82	650	80	2250	RG	RG	AL
I17	315	L	370	1781	1984	65	95,8	0,82	650	80	2360	RG	RG	AL
I18	315	L	420	1782	2251	73	95,9	0,83	650	80	2470	RG	RG	AL
I19	315	L	470	1782	2519	82	96,1	0,83	650	80	2610	RG	RG	AL
I20	355	L	500	1782	2679	82	95,8	0,88	650	82	3160	RG	RG	AL
I21	355	L	550	1782	2947	90	96,0	0,88	650	82	3270	RG	RG	AL
I22	355	L	610	1782	3269	100	96,2	0,88	650	82	3350	RG	RG	AL
I23	400	L	880	1787	4703	92	96,7	0,87	650	81	4410	RG	RG	CU
I24	400	L	1000	1787	5344	103	96,8	0,88	650	81	4620	RG	RG	CU
I25	400	L	1120	1788	5982	115	96,9	0,88	650	81	4800	RG	RG	CU
I26	450	L	1350	1789	7206	137	97,0	0,89	600	84	5820	RG	RG	CU
I27	450	L	1580	1789	8434	160	97,0	0,89	600	84	6090	RG	RG	CU
I28	500	L	1800	1790	9603	183	96,9	0,89	600	84	7050	RG	RG	CU
I29	500	L	1950	1791	10397	198	97,0	0,89	600	84	7380	RG	RG	CU
I30	500	L	2150	1791	11463	215	97,1	0,90	600	84	7660	RG	RG	CU
I31	500	L	2350	1791	12530	235	97,2	0,90	600	84	8100	RG	RG	CU
I32	500	L	2600	1792	13855	260	97,3	0,90	600	84	8590	RG	RG	CU

Base Motor Includes

Accessories and Auxiliary Equipment

- RTD's (PT100) on stator windings, 6 pcs 3 or 4 wire, single type
- Space heaters (Ex e / Ex eb in case of application in hazardous areas)
- Phase insulated line terminal box
- Bearing insulation NDE only

Tests

- Routine Test

Certifications

- Ex nA / Ex ec II B

Paint/Finish

- As per NASI standard specified TDS2012.05.09.00 EN Rev 2 (ISO 12944 Category C4)
- RAL 7031

Does Not Include/To be quoted separately

Accessories and Auxiliary Equipment

- Phase segregated line terminal box
- Star point terminal box

Tests

- Witnessing of test
- Type test

Certifications

- Ex nA / Ex ec II C



Product ID	MOTOR TYPE		RATINGS				EFFICIENCY	POWER FACTOR	LRC	NOISE	MOTOR MASS	BRG.S CODE	
			PN	n	TN	IN	4/4	4/4				NDE	DE
			kW	rpm	Nm	A	%	-					
2 POLE													
A01	355	Y	670	3583	1786	67	96,6	0,91	600	85	3670	SN	SN
A02	355	Y	750	3583	1999	75	96,7	0,91	600	85	3885	SN	SN
A03	355	Y	850	3584	2265	84	96,9	0,91	600	85	4030	SN	SN
A04	400	Y	950	3585	2530	94	96,7	0,91	650	85	4635	SN	SN
A05	400	Y	1120	3585	2983	111	96,9	0,91	650	85	4930	SN	SN
A06	400	Y	1250	3585	3330	124	97,0	0,91	650	85	5140	SN	SN
A07	450	Y	1450	3585	3862	144	96,6	0,91	650	85	6480	SN	SN
A08	500	Y	1690	3585	4502	166	96,9	0,92	650	85	8180	SN	SN
4 POLE													
A09	355	L	560	1786	2994	59	96,5	0,86	650	78	3560	SN	SN
A10	355	L	600	1787	3206	62	96,6	0,87	650	78	3650	SN	SN
A11	355	L	670	1787	3580	70	96,7	0,87	650	78	3780	SN	SN
A12	355	L	750	1787	4008	78	96,8	0,87	650	78	3880	SN	SN
A13	400	L	880	1787	4703	92	96,7	0,87	650	81	4510	SN	SN
A14	400	L	1000	1787	5344	103	96,8	0,88	650	81	4720	SN	SN
A15	400	L	1120	1788	5982	115	96,9	0,88	650	81	4900	SN	SN
A16	450	L	1350	1789	7206	137	97,0	0,89	600	84	5990	SN	SN
A17	450	L	1580	1789	8434	160	97,0	0,89	600	84	6260	SN	SN
A18	500	L	1800	1790	9603	183	96,9	0,89	600	84	7220	SN	SN
A19	500	L	1950	1791	10397	198	97,0	0,89	600	84	7550	SN	SN

Base Motor Includes

Accessories and Auxiliary Equipment

- RTD's (PT100) on stator windings, 6 pcs 3 or 4 wire, single type
- RTD's (PT100) in bearing, 2 pcs (1 RTD each bearing), 3 or 4 wire, simple type
- Space heaters (Ex e / Ex eb in case of application in hazardous areas)
- Phase insulated line terminal box
- Bearing insulation on both DE – NDE
- Provision only for BN proximitors on both DE and NDE (upon request)

Tests

- Routine test according to API 541 5th edition para. 6.3.2
- Vibration test

Certifications

- Ex nA / Ex ec II B

Paint/Finish

- As per NASI standard + C5M (ISO 12944 C5-I or C5-M)
- RAL 7031

Does Not Include/To be quoted separately

Accessories and Auxiliary Equipment

- Phase segregated terminal box
- Star point terminal box
- BN system
- Auxiliary terminal box for BN

Tests

- Complete test according to API 541 5th edition para. 6.3.5.1
- Stator Test

Certifications

- Ex nA / Ex ec II C



Our Demand Performance machines were designed to meet the most stringent Oil & Gas requirements and are fully compliant with Shell DEP specifications.

Product ID	MOTOR TYPE		RATINGS				EFFICIENCY	POWER FACTOR	LRC	NOISE	MOTOR MASS	BRG.S CODE	
			PN	n	TN	IN	4/4	4/4				NDE	DE
			kW	rpm	Nm	A	%	-					
2 POLE													
S01	355	Y	670	3583	1786	67	96,6	0,91	600	85	3670	SN	SN
S02	355	Y	750	3583	1999	75	96,7	0,91	600	85	3885	SN	SN
S03	355	Y	850	3584	2265	84	96,9	0,91	600	85	4030	SN	SN
S04	400	Y	950	3585	2530	94	96,7	0,91	650	85	4635	SN	SN
S05	400	Y	1120	3585	2983	111	96,9	0,91	650	85	4930	SN	SN
S06	400	Y	1250	3585	3330	124	97,0	0,91	650	85	5140	SN	SN
S07	450	Y	1450	3585	3862	144	96,6	0,91	650	85	6480	SN	SN
S08	500	Y	1690	3585	4502	166	96,9	0,92	650	85	8180	SN	SN
4 POLE													
S09	355	L	560	1786	2994	59	96,5	0,86	650	78	3560	SN	SN
S10	355	L	600	1787	3206	62	96,6	0,87	650	78	3650	SN	SN
S11	355	L	670	1787	3580	70	96,7	0,87	650	78	3780	SN	SN
S12	355	L	750	1787	4008	78	96,8	0,87	650	78	3880	SN	SN
S13	400	L	880	1787	4703	92	96,7	0,87	650	81	4510	SN	SN
S14	400	L	1000	1787	5344	103	96,8	0,88	650	81	4720	SN	SN
S15	400	L	1120	1788	5982	115	96,9	0,88	650	81	4900	SN	SN
S16	450	L	1350	1789	7206	137	97,0	0,89	600	84	5990	SN	SN
S17	450	L	1580	1789	8434	160	97,0	0,89	600	84	6260	SN	SN
S18	500	L	1800	1790	9603	183	96,9	0,89	600	84	7220	SN	SN
S19	500	L	1950	1791	10397	198	97,0	0,89	600	84	7550	SN	SN

Base Motor Includes

Accessories and Auxiliary Equipment

- RTD’s (PT100) on stator windings, 6 pcs 3 or 4 wire, simple type
- RTD’s (PT100) in bearing, 2 pcs (1 RTD each bearing), 3 or 4 wire, simple type (Sleeve only)
- Space heaters
- Phase insulated line terminal box
- Bearing insulation on both DE - NDE
- Provision only for BN proximitors on sleeve bearings (upon request)

Tests

- Routine test according to SHELL DEP 33.66.05.31-Gen para. 16.5.3

Certifications

- Ex nA IIB

Paint/Finish

- As per NASI standard + C5M (ISO 12944 C5-I or C5-M)
- Standard RAL 5012

Does Not Include/To be quoted separately

Accessories and Auxiliary Equipment

- Phase segregated terminal box
- Star point terminal box
- BN system
- Auxiliary terminal box for BN

Tests

- Performance Test according to Shell DEP 33.66.05.31-Gen para 16.5.1

- Special Tests and Sample coil test

Certifications

- Ex nA IIC



Roller Bearings

CAplus motors are normally equipped with deep groove ball bearings (for shaft heights 315 to 450mm) and cylindrical roller bearings + deep groove ball bearings (for shaft heights 500 to 560mm) and the non-drive-end bearings are insulated. In a ball bearing, the load is transmitted from the outer race to the ball and from the ball to the inner race. Since the ball is a sphere, it only contacts the inner and outer race at a very small point, which helps it to spin very smoothly. In cylindrical roller bearings the contact between the inner and outer race is not a point but a line. This spreads the load out over a larger area, allowing the bearing to handle much greater radial loads than a ball bearing. CAplus motors for API 541 and Shell are supplied with one Pt-100 temperature sensor in each bearing to ensure continuous temperature monitoring during operations. Both drive-end and non-drive-end are insulated.

Sleeve Bearings

If sleeve bearings are requested, CAplus motors are fitted with EF-type bearings with floating labyrinth seals. The bearings are rigidly mounted to the end shield of the machine and their housing is made of cast iron. Tapped holes for thermometer, oil inlet and outlet and oil level are provided on both sides of the housing. The bearings are lubricated by hydrodynamic lubrication, which can be of a self-lubricating or oil circulation type.

Frame	Number of poles	Hz	Roller Bearings	
			DE	NDE
315	2	50	7218 BECBM	7218 BECBM
		60	7218 BECBM	7218 BECBM
	4	50	6320 M/C3	6320 M/C3
		60	6320 M/C3	6320 M/C3
355	2	50	7220 BECBM	7220 BECBM
		60	7220 BECBM	7220 BECBM
	4	50	6321 M/C3	6321 M/C3
		60	6321 M/C3	6321 M/C3
400	2	50	7221 BECBM	7221 BECBM
		60	7221 BECBM	7221 BECBM
	4	50	6322 M/C3	6322 M/C3
		60	6322 M/C3	6322 M/C3
450	2	50	7222 BECBM	7222 BECBM
		60	7222 BECBM	7222 BECBM
	4	50	6323 C3	6323 C3
		60	6323 C3	6323 C3
500	2	50	7224 BECBM	7224 BECBM
		60	7224 BECBM	7224 BECBM
	4	50	NU228 C3 + 6228 M/C3	NU228 C3
		60	NU228 C3 + 6228 M/C3	NU228 C3

Frame	Number of poles	Hz	Sleeve Bearings	
			DE	NDE
355	2	50	EFNL 9-80	EFNL 9-80
		60	EFNL 9-80	EFNL 9-80
	4	50	EFNL 9-80	EFNL 9-80
		60	EFNL 9-80	EFNL 9-80
400	2	50	EFNL 9-80	EFNL 9-80
		60	EFNL 9-80	EFNL 9-80
	4	50	EFNL 9-90	EFNL 9-90
		60	EFNL 9-90	EFNL 9-90
450	2	50	EFNL 9-90	EFNL 9-90
		60	EFNL 9-80	EFNL 9-80
	4	50	EFNL 11-100	EFNL 11-100
		60	EFNL 11-100	EFNL 11-100
500	2	50	EFNL 9-100	EFNL 9-100
		60	EFNL 9-90	EFNL 9-90
	4	50	EFNL 11-110	EFNL 11-110
		60	EFNL 11-100	EFNL 11-100

Embedded Resistance thermodetectors

CAplus motors are equipped with six resistance thermodetectors (PT100) with three wires per phase, equally spaced around the stator circumference: three are inserted between coils and three in the bottom of the slot. The API 541 and Shell versions are also fitted with one PT100 per bearing. The PT100s are connected to the main auxiliary terminal box.

Space heaters

Space heaters are of the armored type and are usually available for single phase supply voltage at 220V, 50 or 60 Hz. Space heaters connection cables are wired to the main auxiliary terminal box provided with 4 pole terminal and with an earth terminal. The main auxiliary terminal box is placed on top of the motor for easy connectivity and maintenance.

Terminal Boxes

Terminal boxes are designed to facilitate cable connection and shorten installation times. They can be mounted on either side of the motor, and are equipped with a pressure relief device as an added safety feature. Design options are available, including a star point terminal box, phase insulated, and phase segregated terminal boxes.

Main terminal Box

The main air insulated terminal box (see **Figure 1**) is mounted on top of the motor and can be rotated in step of 90°. It contains three copper terminal assemblies fastened to three epoxy standoff insulators.

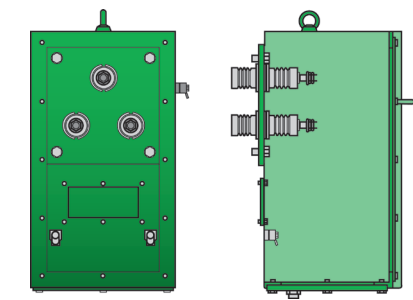


Figure 1

Motor cables are press fitted to the locking nut. A copper pressure relief diaphragm is located in the rear wall of the compartment. Mains incoming cables enter the terminal box via suitable certified cable glands, mounted on a gland plate. Assemblies are attached to the enclosure wall with a silicone rubber gasket in the joint and fixed to the insulators.

Phase segregated terminal box

The Phase Segregated Terminal Box (see **Figure 2**) contains a 3-phase terminal assembly for the connection of external supply cables to the internal cabling of the motor. The main enclosure is fabricated as three separate enclosures (one per phase) each containing a fiberglass reinforced polyester resin insulating box and fitted with its own bolt on cover. Under each cover is an insulating plate. Sandwiched between the flange of the enclosure and the lip on the fiberglass reinforced polyester resin insulating box is a rubber gasket and a second similar gasket between the flange of the sub-enclosure and the insulating plate under the cover. A copper pressure relief diaphragm is located in the rear wall of each phase compartment and a silica gel desiccator is incorporated in the front wall of each phase compartment.

Star point terminal box

The star point terminal box (see **Figure 3**) contains three epoxy insulated terminal posts or a copper terminal bar fastened to three epoxy standoff insulators. Motor cables are attached to one side of the neutral terminal assembly via suitable lugs. Possible incoming cables can enter the terminal box

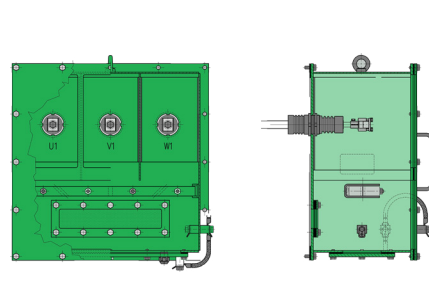


Figure 2

via suitable certified cable glands, which mounted on a gland plate assemblies attached to the enclosure wall with a silicone rubber gasket in the joint and fixed to the insulators.

Routine test

Provides information to confirm that the motor is as designed and is suitable for service. This test is essential and is performed on each unit before sending the product to site.

Type Test

Type test provides typical performance values for purchased motor together with a copy of the inspection and testing report issued to customer

- *Complete Test* according to API 541 5th edition
- *Performance Test* according to SHELL DEP requirements

Bearing insulation

Insulated bearings reliably prevent current discharge. In general the non-drive-end bearing is insulated. If the motor is operating on a frequency converter, the insulation of the non-drive-end bearing is mandatory.

Bently Nevada System

Bently Nevada vibration probes and proximitors can be installed on the bearings to make appropriate measurements.

Auxiliary terminal Box for BN

Bently Nevada probes require a dedicated stainless steel auxiliary terminal box.

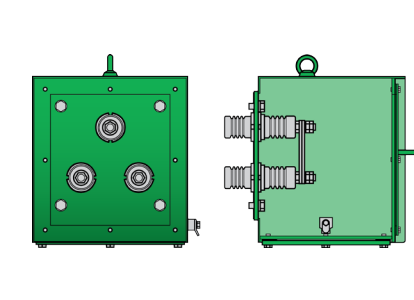


Figure 3

Terminal Boxes

Main Terminal Box 001

The main terminal box is placed on top of the motor and it is provided with a rear flange for fixing to the frame. It can be mounted in front, center and back position and rotated in step of 90° (left and right). Terminal boxes with segregated phases are

available on request. If required, a star point terminal box may be installed on the opposite side to allow connection to different protection devices. The main terminal boxes, in the standard execution are provided with pass through

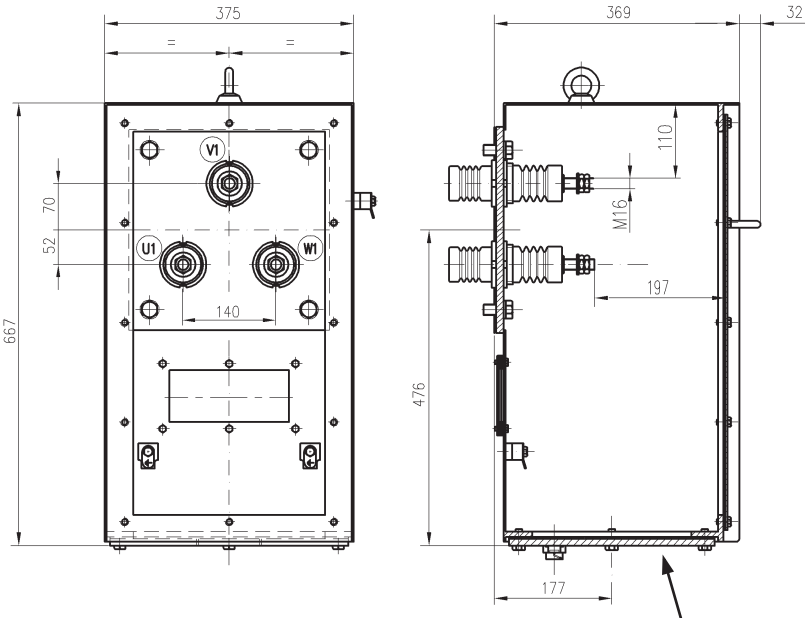
china or resin insulators. The degree of protection is IP55 and it is internally provided of a rupture diaphragm for safety against eventual internal overpressures due to short circuit, preventing injuries to the personnel.

Technical Data

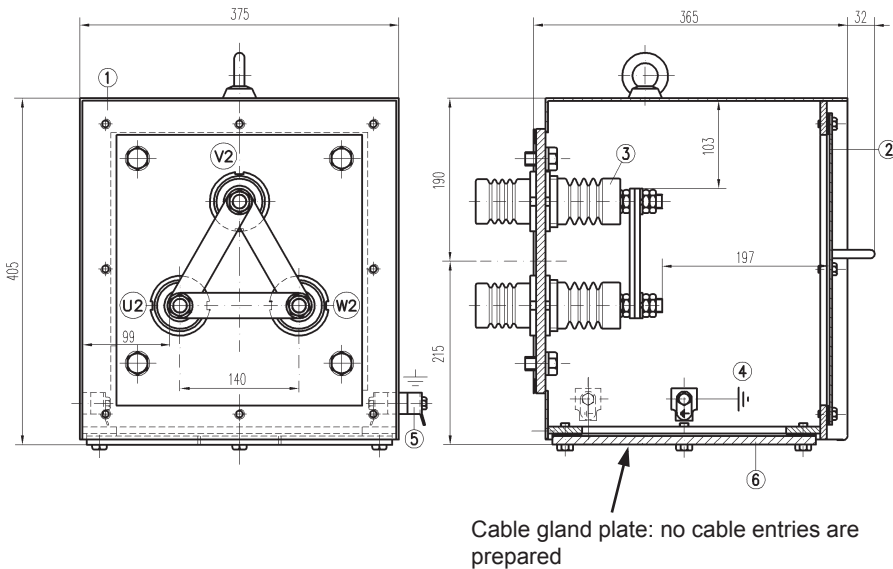
Voltage: up to 6,6 kV
Current: 430 A
No of Cables: 1 per phase
Max cables cross section: 300 mm
Cable gland entry: 1 pcs
Connection Screws: M16
Weight: 48kg
Protection: IP55
Dynamic short circuit current:
40 kA rms x 0,25 s/
100 kA peak
Rotation: in steps of 90°

Material

Box: Welded structural steel (thickness min. 3 mm)
Cable Gland plate: steel, aluminum, AISI316L with cable gland
Connection Screws: Nickel-coated copper
Isolators: Epoxy Resin bushing
Grounding Pad: Stainless Steel
Distance between terminals and cable inlet: 425mm



Star point Terminal Box 002



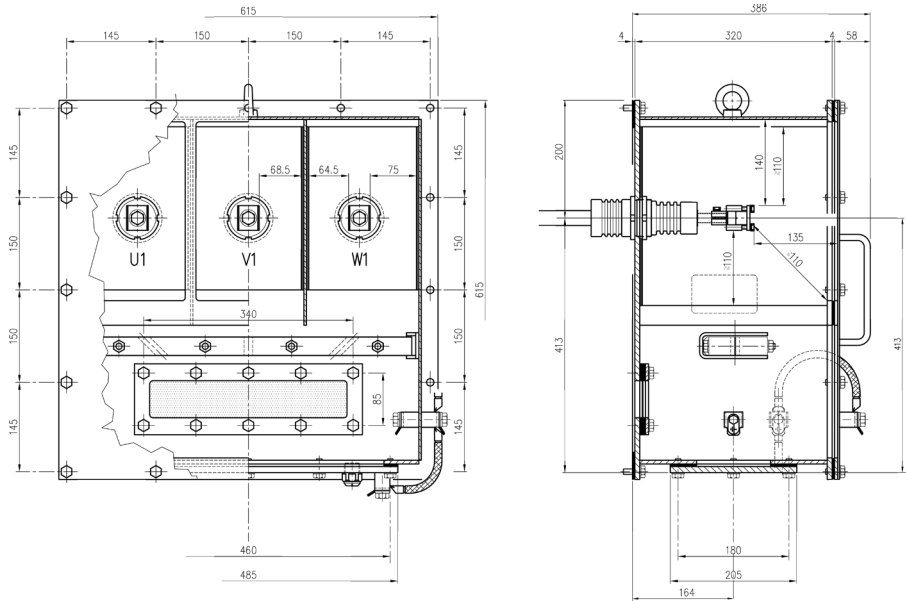
Technical Data

Voltage: up to 6,6 kV
Current: 430 A
Weight: 48kg
Protection: IP55
Rotation: in steps of 90°

Material

Box: Welded structural steel (thickness min. 3 mm)
Connection Screws: Nickel-coated copper
Isolators: Epoxy Resin bushing
Grounding Pad: Stainless Steel

Segregated phase Terminal Box 003



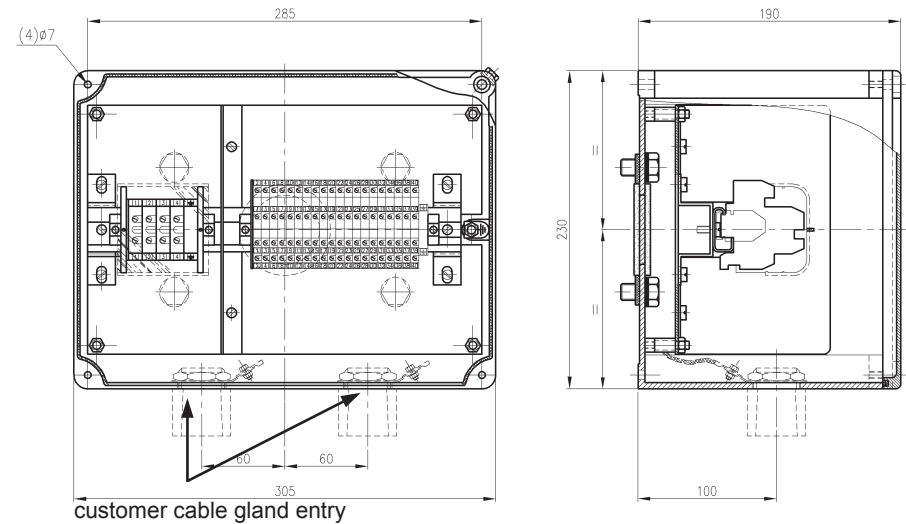
Technical Data

Voltage: up to 8,3 kV
Current: 430 A
No of Cables: 1 per phase
Max cables cross section: 240 mm
Cable gland entry: 1 pcs
Weight: 48kg
Protection: IP55
Dynamic short circuit current:
40 kA rms x 0,25 s/
100 kA peak
Rotation: in steps of 90°

Material

Box: Welded structural steel (thickness min. 3 mm)
Cable Gland plate: steel, aluminum, AISI316L with cable gland
Grounding Pad: Stainless steel
Distance between terminals and cable inlet: 615mm

Auxiliary Terminal Box 004



The auxiliary box is used to connect control equipment and heating elements.

One box with two compartments including

- RTDs stator winding
- RTDs bearings
- Vibration sensors
- Contact dial thermometer
- Heating elements

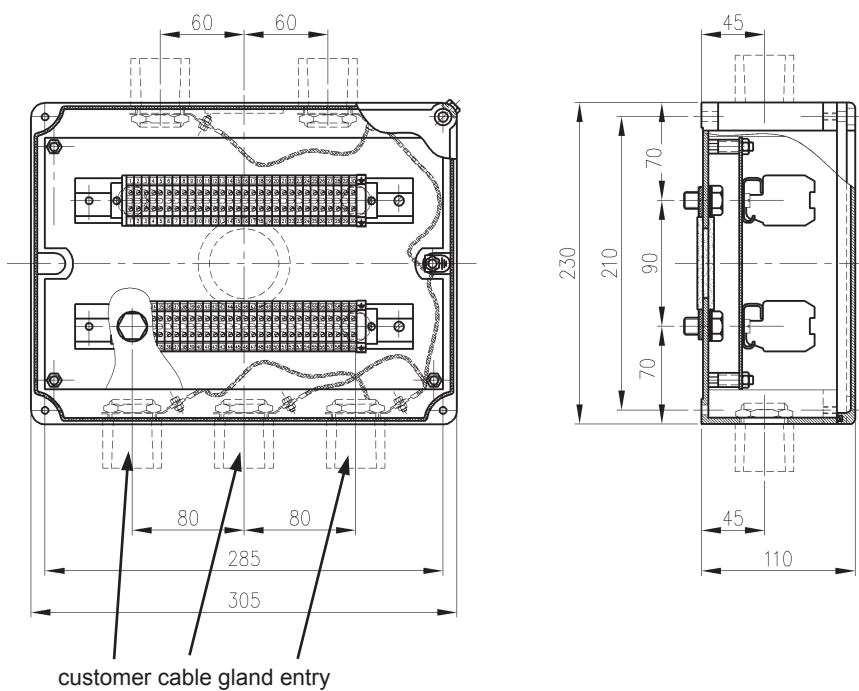
Features:

Material: Al-Si12
Main dimensions: 230x305x190 mm
Degree of protection: IP66
Silicone rubber gasket material
Assembly DIN Rail 35, 35x285
Max terminal blocks:
Heating Elements: 4 pcs 6 or 10 mm2
Accessories: 14 pcs double type 2,5 mm2

All cable entries of the box are closed by Ex certified plugs for motor transportation.

Terminal Boxes

Auxiliary Terminal Box 005



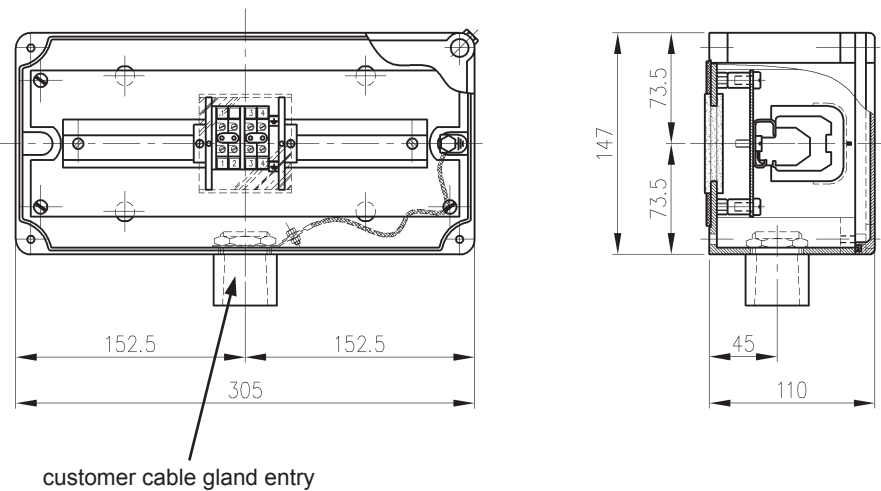
One box equipped with one or two terminal blocks row including:

- RTDs stator windings
- RTDs bearing
- Vibration sensors
- Contact dial thermometer

Features:
Material: Al-Si12
Main dimensions: 230x305x110 mm
Degree of protection: IP66
Silicone rubber gasket material
Assembly DIN Rail 35, 35x285
Max terminal blocks:
1 row: 30 pcs 2,5 mm2
25 pcs 4,5 mm2
2 rows: 60 pcs 2,5 mm2
50 pcs 4,5 mm2

All cable entries of the box are closed by Ex certified plugs for motor transportation.

Auxiliary Terminal Box 007



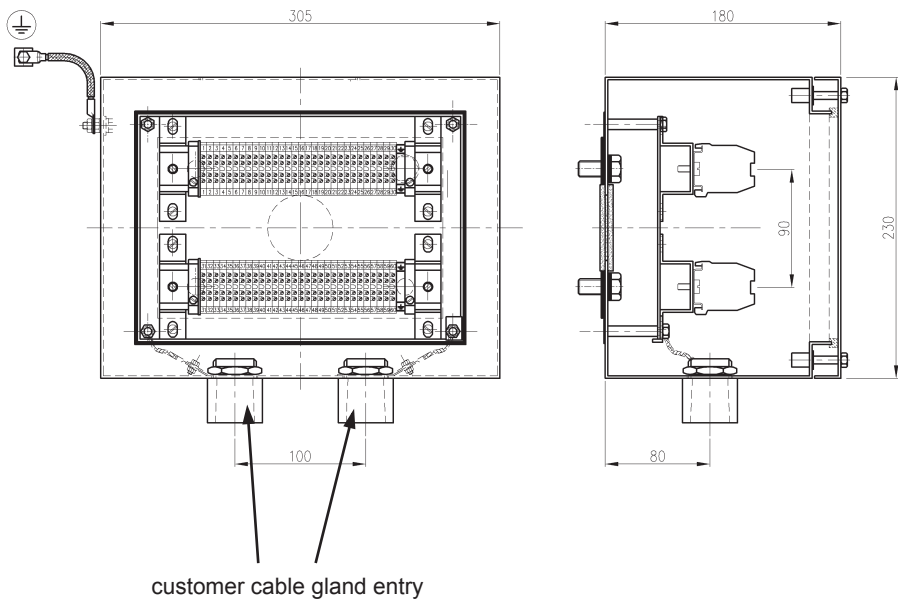
One box including:

- Heating elements

Features:
Material: Al-Si12
Main dimensions: 147x305x110 mm
Degree of protection: IP66
Silicone rubber gasket material
Assembly DIN Rail 35, 35x285
Max terminal blocks: 4 pcs 6mm2 or 10mm2

All cable entries of the box are closed by Ex certified plugs for motor transportation.

Auxiliary Terminal Box 006



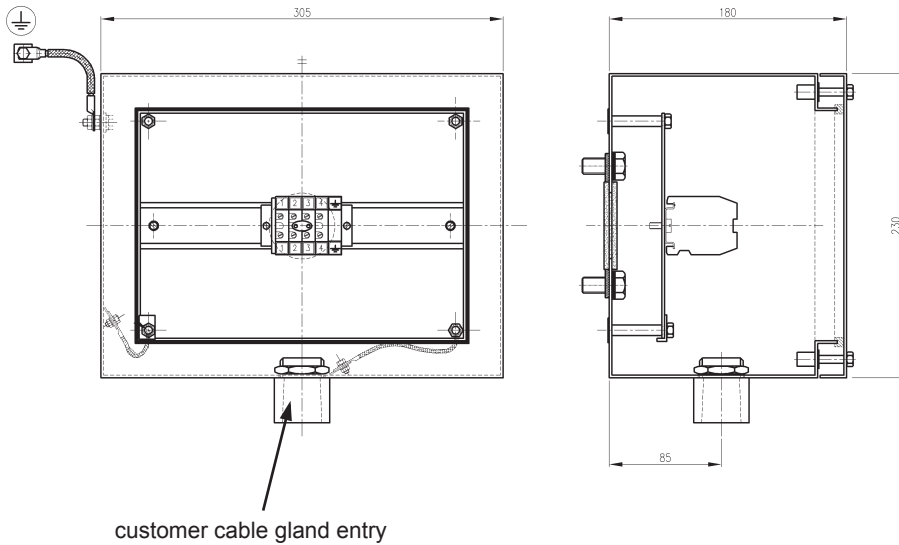
One box including:

- RTDs stator windings
- RTDs bearings
- Vibration sensors
- Contact dial thermometer

Features:
Material: AISI 316L
Main dimensions: 230x305x180 mm
Degree of protection: IP66
Silicone rubber gasket material
Assembly DIN Rail 35, 35x285
Max terminal blocks:
1 row: 30 pcs 2,5 mm2
25 pcs 4,5 mm2
2 rows: 60 pcs 2,5 mm2
50 pcs 4,5 mm2

All cable entries of the box are closed by Ex certified plugs for motor transportation.

Auxiliary Terminal Box 008



One box including:

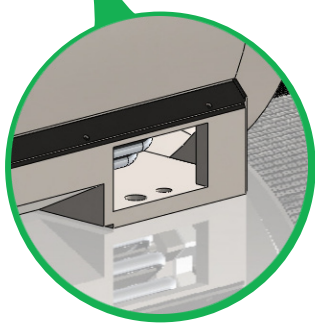
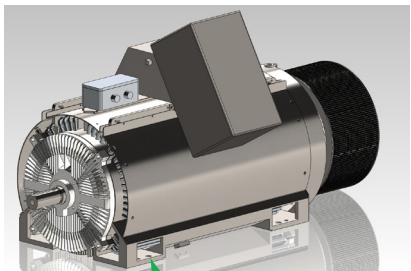
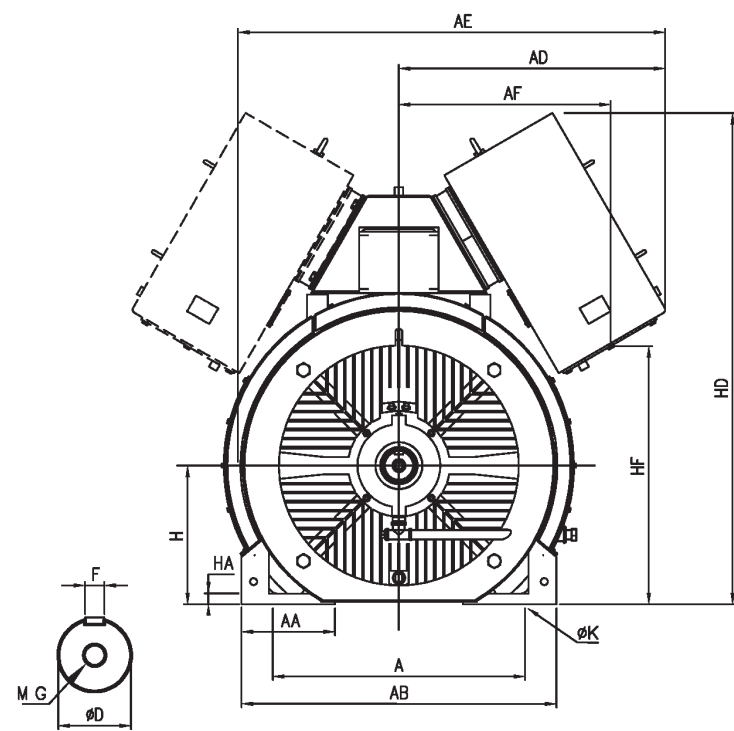
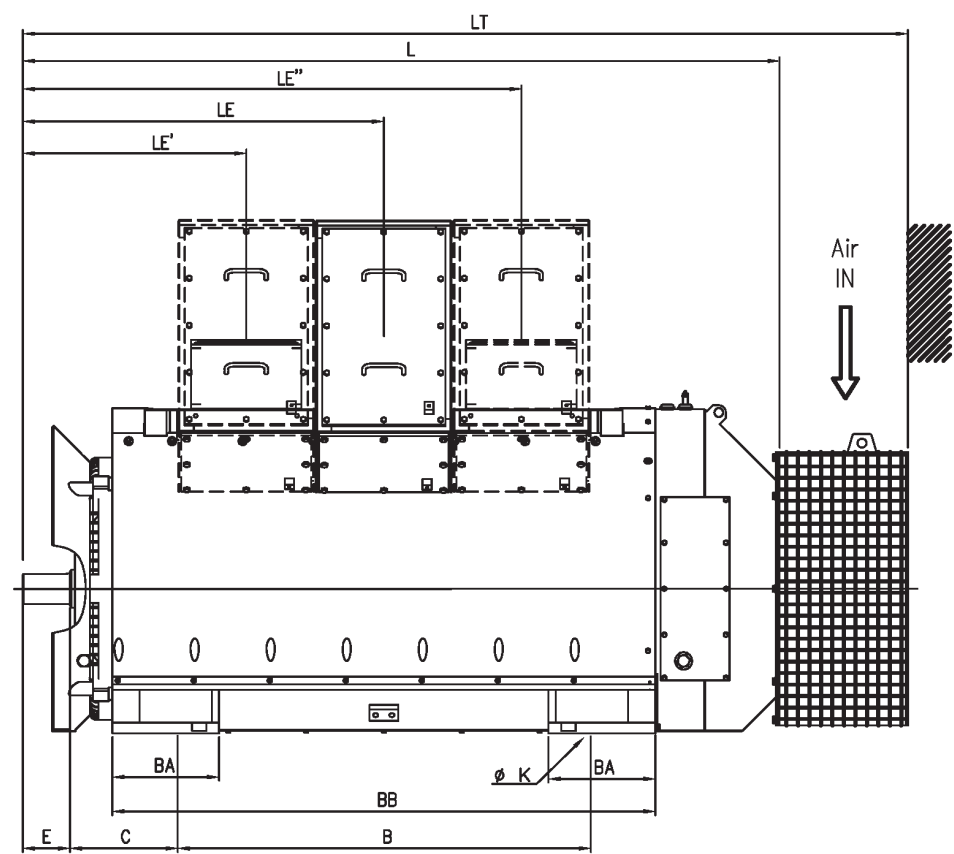
- Heating elements

Features:
Material: AISI 316L
Main dimensions: 230x305x180 mm
Degree of protection: IP66
Silicone rubber gasket material
Assembly DIN Rail 35, 35x285
Max terminal blocks: 4 pcs 6mm2 or 10mm2

All cable entries of the box are closed by Ex certified plugs for motor transportation.

Dimensions

2 Poles - Roller Bearings



Detail of mounting on feet

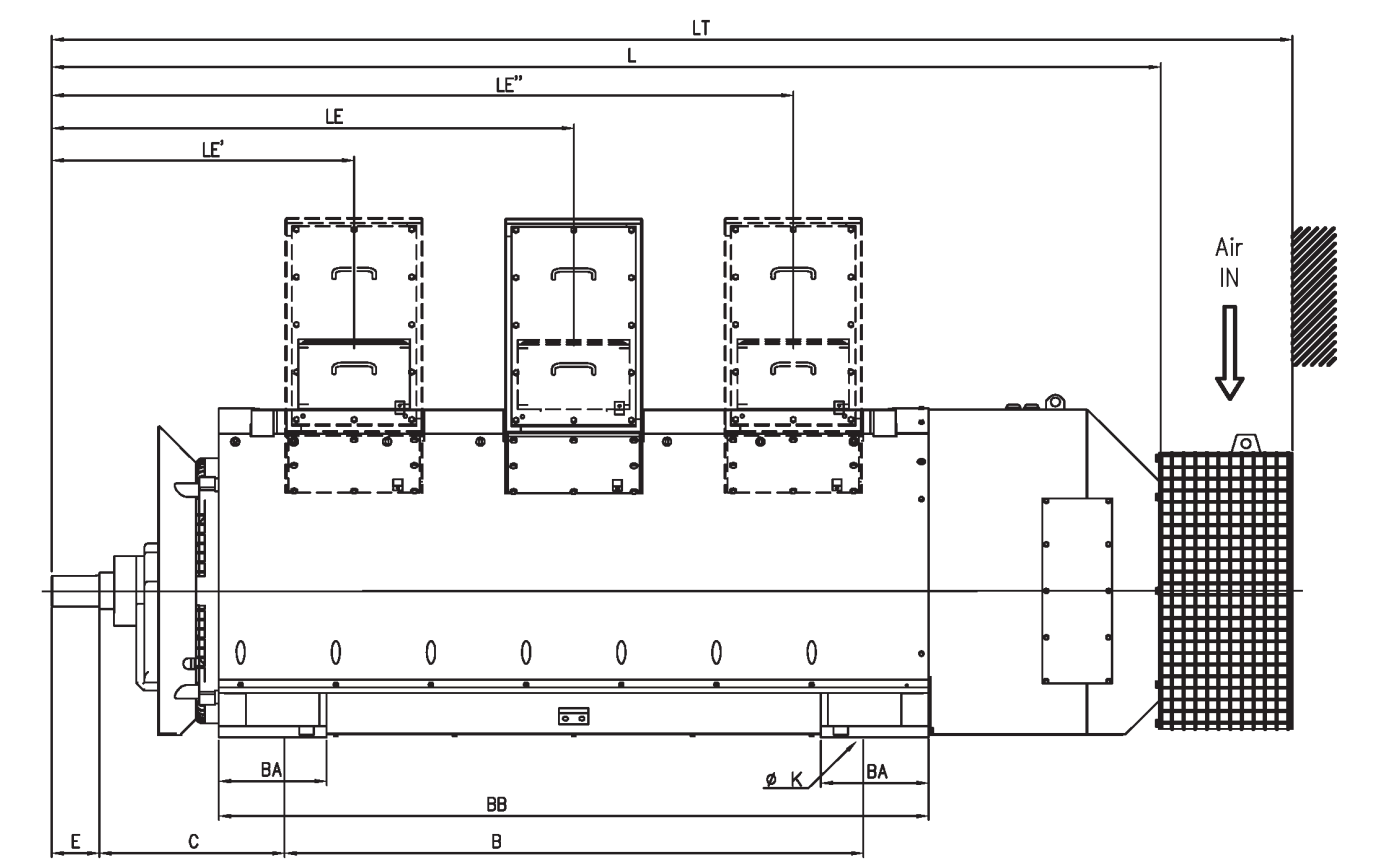
In the 2 pole versions, the feet are compatible with Siemens motors with the same shaft height.

MOTOR TYPE			A mm	AA mm	AB mm	AC mm	AD mm	AE mm	AF mm	H mm	HA mm	HD mm	HF mm	K mm
CAT														
315	L	2	710	235	780	620	730	1160	570	315	25	1260	585	30
315	S	2	710	235	780	620	730	1160	570	315	25	1260	585	30
355	S	2	745	257	825	700	745	1210	585	355	30	1340	665	30
355	L	2	745	257	825	700	745	1210	585	355	30	1340	665	30
355	L	4	745	257	825	700	745	1160	585	355	30	1340	665	30
400	S	2	830	270	910	755	770	1275	610	400	30	1420	745	30
400	L	2	830	270	910	755	770	1275	610	400	30	1420	745	30
400	L	4	830	270	910	755	770	1225	610	400	30	1420	745	30
450	S	2	880	270	960	825	805	1355	645	450	30	1520	845	30
450	L	2	880	270	960	825	805	1355	645	450	30	1520	845	30
450	L	4	880	270	960	825	805	1315	645	450	30	1520	845	30
500	L	2	1000	300	1070	900	830	1430	665	500	45	1620	940	30
500	L	4	930	300	1070	900	830	1390	665	500	45	1620	940	30

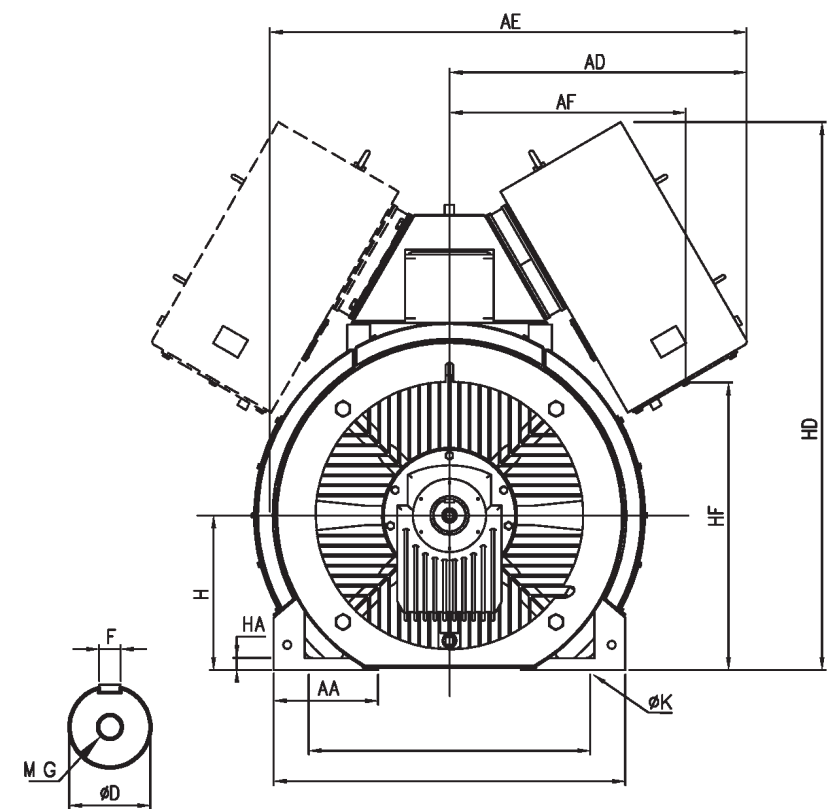
MOTOR TYPE			B mm	BA mm	BB mm	C mm	E mm	D mm	F mm	G mm	L mm	LT mm	LE mm	LE' mm	LE'' mm
315	L	2	1090	295	1340	237	115	70	22	M24	1860	2230	NA	650	1150
315	S	2	960	295	1210	237	115	70	22	M24	1740	2100	NA	585	1085
355	S	2	950	295	1240	264	115	75	25	M24	1780	2135	NA	605	1105
355	L	2	1110	295	1400	265	115	75	25	M24	1980	2300	935	555	1310
355	L	4	1110	295	1400	265	190	100	28	M24	2010	2370	1005	625	1385
400	S	2	1040	295	1330	262	140	85	25	M24	1925	2285	NA	675	1175
400	L	2	1210	295	1500	265	140	85	25	M24	2140	2455	1010	630	1390
400	L	4	1210	295	1500	265	210	105	28	M24	2165	2525	1075	695	1455
450	S	2	1190	315	1480	262	140	95	28	M24	2085	2445	1000	600	1400
450	L	2	1390	315	1680	265	140	95	28	M24	2285	2645	1070	670	1470
450	L	4	1390	315	1680	265	210	115	32	M24	2385	2745	1170	770	1570
500	L	2	1470	345	1760	290	160	105	28	M24	2560	2870	1185	735	1635
500	L	4	1470	345	1760	290	230	120	32	M24	2580	2940	1255	805	1705

Dimensions

2 Poles - Sleeve Bearings



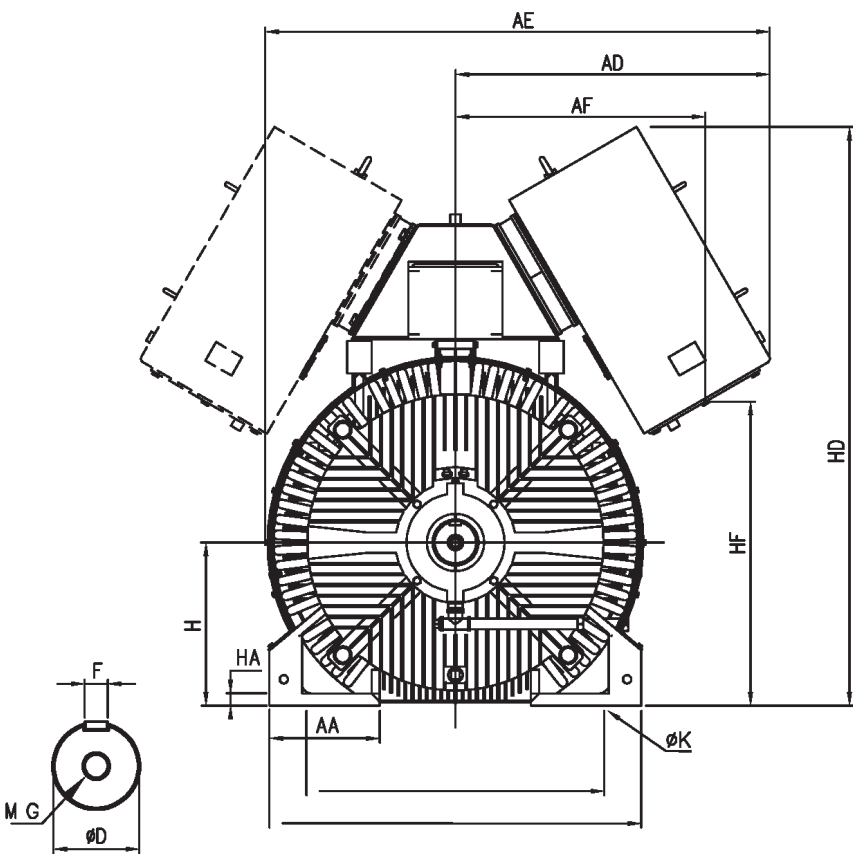
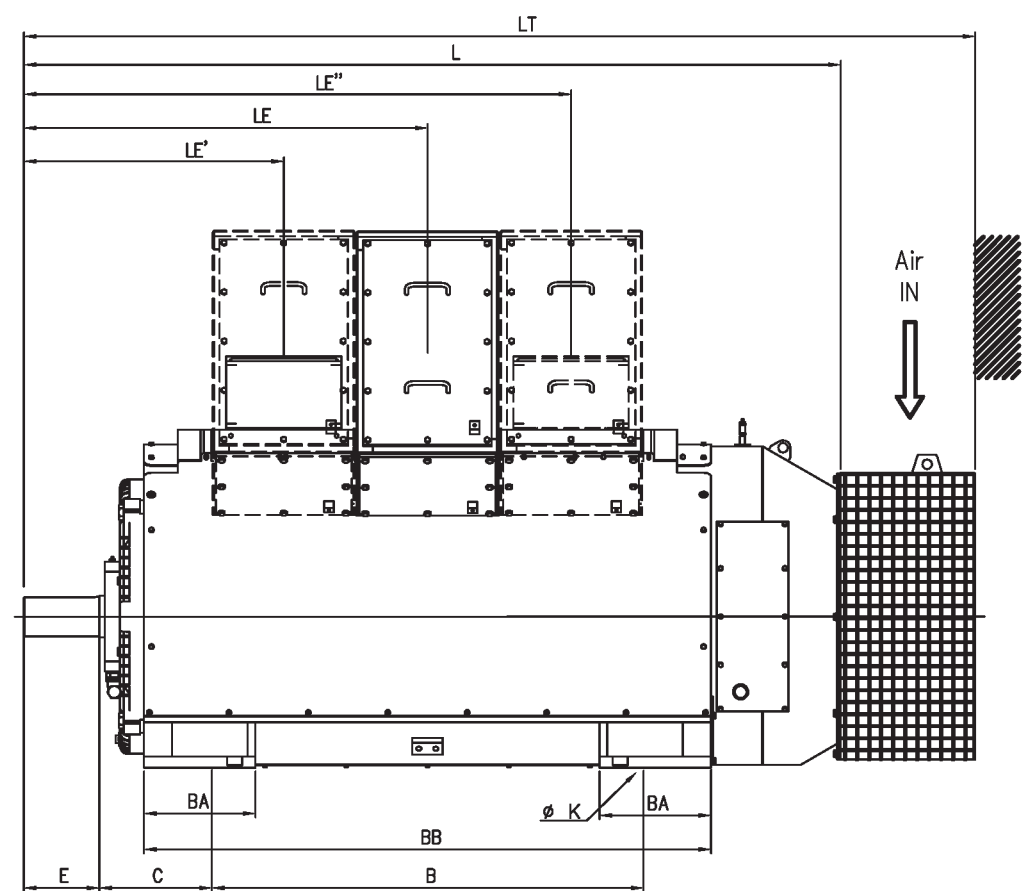
MOTOR TYPE			A	AA	AB	AC	AD	AE	AF	H	HA	HD	HF	K
CAT			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
355	Y	2	745	257	825	700	745	1210	585	355	30	1340	665	30
355	Z	2	745	257	825	700	745	1210	585	355	30	1340	665	30
355	L	4	745	257	825	700	745	1160	585	355	30	1340	665	30
400	Y	2	830	270	910	755	770	1276	610	400	30	1420	745	30
400	Z	2	830	270	910	755	770	1276	610	400	30	1420	745	30
400	L	4	830	270	910	755	770	1225	610	400	30	1420	745	30
450	Y	2	880	270	960	825	805	1355	645	450	30	1520	845	30
450	Z	2	880	270	960	825	805	1355	645	450	30	1520	845	30
450	L	4	880	270	960	825	805	1315	645	450	30	1520	845	30
500	Y	2	1000	300	1070	900	825	1430	667	500	45	1620	940	30
500	Z	2	1000	300	1070	900	825	1430	667	500	45	1620	940	30
500	L	4	1000	300	1070	900	825	1390	667	500	45	1620	940	30



MOTOR TYPE			B	BA	BB	C	E	D	F	G	L	LT	LE	LE'	LE''
CAT			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
355	Y	2	1330	295	1620	460	115	75	25	M24	2680	3040	1270	890	1650
355	Z	2	1430	295	1720	460	115	75	25	M24	2780	3140	1320	940	1700
355	L	4	1110	295	1400	490	190	100	28	M24	2535	2895	1235	855	1615
400	Y	2	1510	295	1800	470	140	85	25	M24	2910	3280	1385	855	1915
400	Z	2	1650	295	1940	470	140	85	25	M24	3060	3420	1455	855	2055
400	L	4	1210	295	1500	470	210	105	28	M24	2690	3050	1305	925	1685
450	Y	2	1570	315	1860	490	140	85	25	M24	2980	3340	1415	1015	1815
450	Z	2	1660	315	1950	490	140	95	28	M24	3070	3435	1460	1060	1860
450	L	4	1390	315	1680	520	210	115	32	M24	2950	3310	1425	1025	1825
500	Y	2	1570	345	1860	490	160	105	28	M24	2970	3330	1435	935	1935
500	Z	2	1720	345	2010	490	160	105	28	M24	3120	3480	1510	935	2085
500	L	4	1470	345	1760	440	230	120	32	M24	3090	3450	1485	1035	1935

Dimensions

4 Poles - Roller Bearings

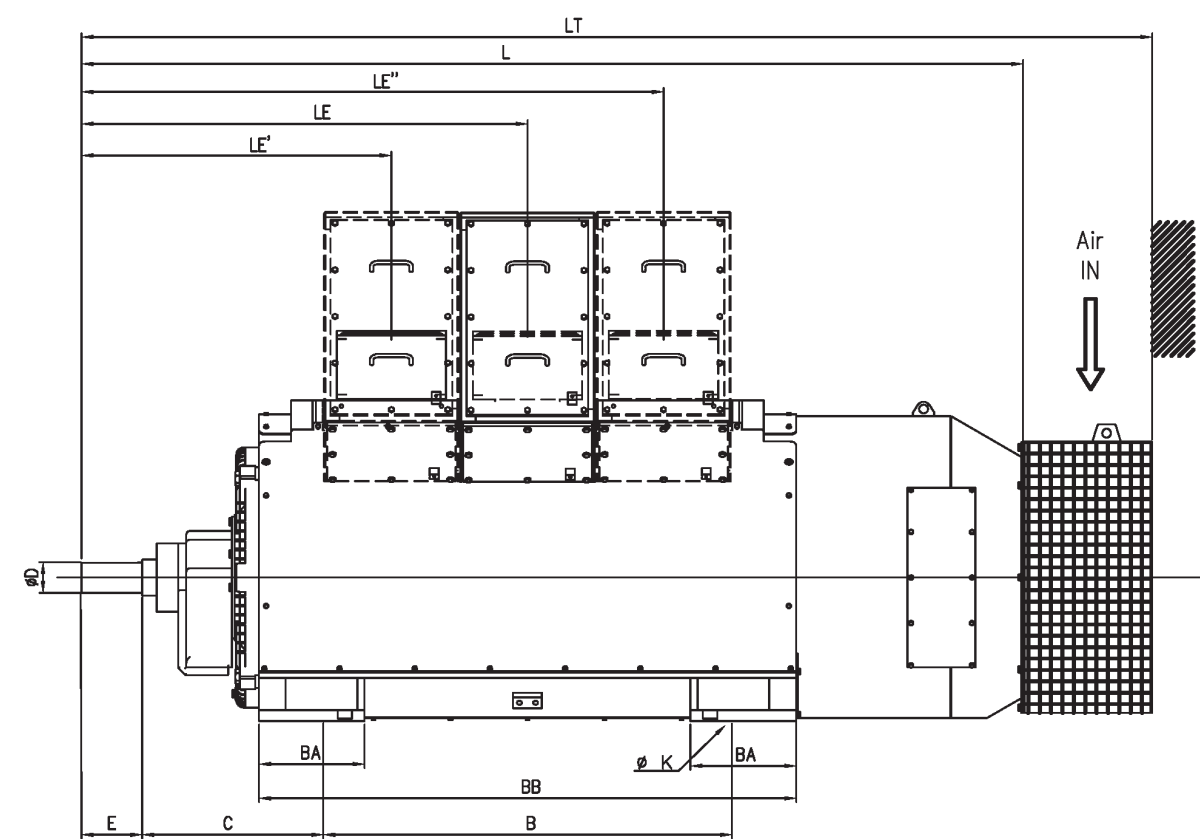


MOTOR TYPE				A	AA	AB	AC	AD	AE	AF	H	HA	HD	HF	K
CAT				mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
315	L	4		710	235	780	620	730	1110	570	315	25	1260	585	30
355	S	2		745	257	825	700	745	1210	585	355	30	1340	665	30
355	L	2		745	257	825	700	745	1210	585	355	30	1340	665	30
355	L	4		745	257	825	700	745	1160	585	355	30	1340	665	30
400	S	2		830	270	910	755	770	1275	610	400	30	1420	745	30
400	L	2		830	270	910	755	770	1275	610	400	30	1420	745	30
400	L	4		830	270	910	755	770	1225	610	400	30	1420	745	30
450	S	2		880	270	960	825	805	1355	645	450	30	1520	845	30
450	L	2		880	270	960	825	805	1355	645	450	30	1520	845	30
450	L	4		880	270	960	825	805	1315	645	450	30	1520	845	30
500	L	2		1000	300	1070	900	830	1430	665	500	45	1620	940	30
500	L	4		930	300	1070	900	830	1390	665	500	45	1620	940	30

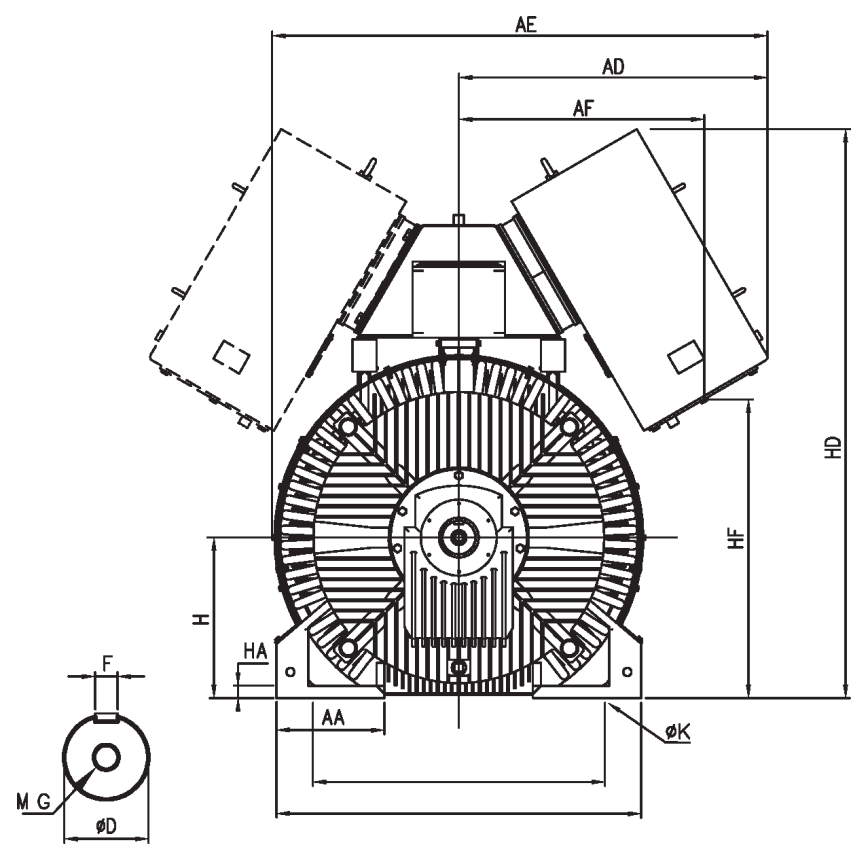
MOTOR TYPE				B	BA	BB	C	E	D	F	G	L	LT	LE	LE'	LE''
CAT				mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
315	L	4		1090	295	1340	237	190	95	25	M24	1945	2305	NA	725	1225
355	S	2		950	295	1240	264	115	75	25	M24	1780	2135	NA	605	1105
355	L	2		1110	295	1400	265	115	75	25	M24	1980	2300	935	555	1310
355	L	4		1110	295	1400	265	190	100	28	M24	2010	2370	1005	625	1385
400	S	2		1040	295	1330	262	140	85	25	M24	1925	2285	NA	675	1175
400	L	2		1210	295	1500	265	140	85	25	M24	2140	2455	1010	630	1390
400	L	4		1210	295	1500	265	210	105	28	M24	2165	2525	1075	695	1455
450	S	2		1190	315	1480	262	140	95	28	M24	2085	2445	1000	600	1400
450	L	2		1390	315	1680	265	140	95	28	M24	2285	2645	1070	670	1470
450	L	4		1390	315	1680	265	210	115	32	M24	2385	2745	1170	770	1570
500	L	2		1470	345	1760	290	160	105	28	M24	2560	2870	1185	735	1635
500	L	4		1470	345	1760	290	230	120	32	M24	2580	2940	1255	805	1705

Dimensions

4 Poles - Sleeve Bearings



MOTOR TYPE			A	AA	AB	AC	AD	AE	AF	H	HA	HD	HF	K
CAT			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
355	Y	2	745	257	825	700	745	1210	585	355	30	1340	665	30
355	Z	2	745	257	825	700	745	1210	585	355	30	1340	665	30
355	L	4	745	257	825	700	745	1160	585	355	30	1340	665	30
400	Y	2	830	270	910	755	770	1276	610	400	30	1420	745	30
400	Z	2	830	270	910	755	770	1276	610	400	30	1420	745	30
400	L	4	830	270	910	755	770	1225	610	400	30	1420	745	30
450	Y	2	880	270	960	825	805	1355	645	450	30	1520	845	30
450	Z	2	880	270	960	825	805	1355	645	450	30	1520	845	30
450	L	4	880	270	960	825	805	1315	645	450	30	1520	845	30
500	Y	2	1000	300	1070	900	825	1430	667	500	45	1620	940	30
500	Z	2	1000	300	1070	900	825	1430	667	500	45	1620	940	30
500	L	4	1000	300	1070	900	825	1390	667	500	45	1620	940	30



MOTOR TYPE			B	BA	BB	C	E	D	F	G	L	LT	LE	LE'	LE''
CAT			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
355	Y	2	1330	295	1620	460	115	75	25	M24	2680	3040	1270	890	1650
355	Z	2	1430	295	1720	460	115	75	25	M24	2780	3140	1320	940	1700
355	L	4	1110	295	1400	490	190	100	28	M24	2535	2895	1235	855	1615
400	Y	2	1510	295	1800	470	140	85	25	M24	2910	3280	1385	855	1915
400	Z	2	1650	295	1940	470	140	85	25	M24	3060	3420	1455	855	2055
400	L	4	1210	295	1500	470	210	105	28	M24	2690	3050	1305	925	1685
450	Y	2	1570	315	1860	490	140	85	25	M24	2980	3340	1415	1015	1815
450	Z	2	1660	315	1950	490	140	95	28	M24	3070	3435	1460	1060	1860
450	L	4	1390	315	1680	520	210	115	32	M24	2950	3310	1425	1025	1825
500	Y	2	1570	345	1860	490	160	105	28	M24	2970	3330	1435	935	1935
500	Z	2	1720	345	2010	490	160	105	28	M24	3120	3480	1510	935	2085
500	L	4	1470	345	1760	440	230	120	32	M24	3090	3450	1485	1035	1935

Ordering information

Below are the indications to follow when placing an order. The Identification code includes indications for accessories and color.

Example of a product code

A	B	C	D	E	F	G	H	I
CA+	500	Z	2	A041	A	66	S	2

Explanation of the product code

A	BMotor type
	CA+
B	IEC frame
	315
	355
	400
	450
	500
C	Frame length
	S
	L
	Y
	Z
D	Number of poles
	2
	4
E	Voltage / Frequency
	A = 6600 V / 50 Hz
	B = 4160 V / 60 Hz
	C = 3300 V / 50 Hz

F	Product ID
	From I01 to I39
	From A01 to A26
	From S01 to S26
G	Bearings type
	R = Rolling bearings S = Sleeve bearings
H	Mounting arrangement
	H = Horizontal V = Vertical
I	Painting colour
	1 = RAL 6018
	2 = RAL 7035
	3 = RAL 5012


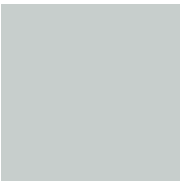

A10	355	L	600	1787	3206	62	96,6	0,87	650	78	3650	SN	SN
A11	355	L	670	1787	3580	70	96,7	0,87	650	78	3780	SN	SN
A12	355	L	750	1787	4008	78	96,8	0,87	650	78	3880	SN	SN
A13	400	L	880	1787	4703	92	96,7	0,87	650	81	4510	SN	SN
A14	400	L	1000	1787	5344	103	96,8	0,88	650	81	4720	SN	SN
A16	450	L	1350	1789	7206	137	97,0	0,89	600	84	5990	SN	SN
A17	450	L	1580	1789	8434	160	97,0	0,89	600	84	6260	SN	SN
A18	500	L	1800	1790	9603	183	96,9	0,89	600	84	7220	SN	SN

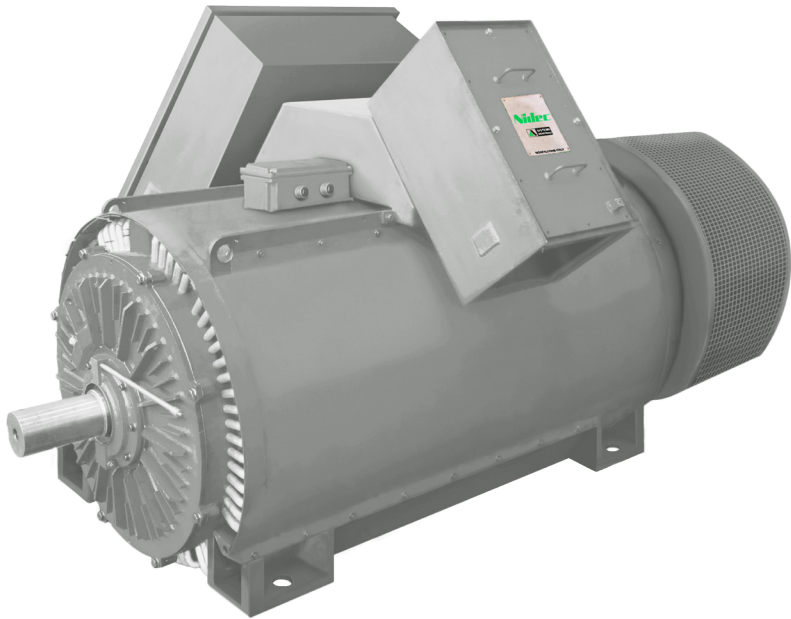
Product ID

IEC frame

Frame length

Bearings type

Painting colour		
1	2	3
		
RAL 6018	RAL 7035	RAL 5012 (Shell)



Example of product code + accessories code

CA+ 500 Z 2 A041 A 66 S H 2 A1 B1 D2 E1 F1
--

Explanation of the accessories code

Code number	Accessories
A1	Terminal Boxes PACK 1
A2	Terminal Boxes PACK 2
A3	Terminal Boxes PACK 3
A4	Terminal Boxes PACK 4
A5	Terminal Boxes PACK 5
A6	Terminal Boxes PACK 6
B1	Separated phase Terminal box
C1	Bently Nevada Terminal box
D1	Bearings RTDs PT100: one each bearing
D2	Bearings RTDs PT100: two each bearing
E1	Frame aluminium pipes
E2	Frame stainless steel pipes
F1	Type test

TB PACK 1	Item
Phase insulated Terminal box	001
Common Auxiliary Terminal box for RTDs and Space Heaters	004

TB PACK 2	Item
Phase insulated Terminal box	001
Star point Terminal box	002
Common Auxiliary Terminal box for RTDs and Space Heaters	004

TB PACK 3	Item
Phase insulated Terminal box	001
Auxiliary Terminal box for RTDs	005
Auxiliary Terminal box for Space Heaters	006

TB PACK 4	Item
Phase insulated Terminal box	001
Star point Terminal box	002
Auxiliary Terminal box for RTDs	005
Auxiliary Terminal box for Space Heaters	006

TB PACK 5	Item
Phase insulated Terminal box	001
Stainless Steel Auxiliary Terminal box for RTDs	007
Stainless Steel Auxiliary Terminal box for Space Heaters	008

TB PACK 6	Item
Phase insulated Terminal box	001
Star point Terminal box	002
Stainless Steel Auxiliary Terminal box for RTDs	007
Stainless Steel Auxiliary Terminal box for Space Heaters	008

CAT	Frames	Included in the standard motor configuration	Code N°	Available on request	Code N°
IEC	50 HZ 2 POLE 315-500	• TB PACK 1 • Stator RTDs PT100 (3 wire class B) • Space Heaters • Bearing insulation, nde side (*) • Frame aluminium pipes • Internal air purgin provision • Routine test • Exna IIB Certified	A1 - - E1 - - -	• TB PACK 2 • TB PACK 3 • TB PACK 4 • TB PACK 5 • TB PACK 6 • Phase separated Terminal box • Bearings RTDs PT100: one per bearing • Bearings RTDs PT100: two per bearing • Frame stainless steel pipes • Type test	A2 A3 A4 A5 A6 B1 D1 D2 E2 F1
	60 HZ 4 POLE 315-500				
	50 HZ 4 POLE 315-500				
	60 HZ 4 POLE 315-500				
API Sleeve Bearings	50 HZ 2 POLE 355-500	• TB PACK 2 • Stator RTDs PT100 (3 wire class B) • Space Heaters • Bearings RTDs PT100: one each bearing • Bently Nevada proximity provision • Bearing insulation de and nde side (**) • Frame aluminium pipes • Internal air purgin provision • Routine test • Exna IIB Certified	A2 - - D1 - E1 - -	• TB PACK 3 • TB PACK 4 • TB PACK 5 • TB PACK 6 • Phase separated Terminal box • Bently Nevada Terminal box • Bearings RTDs PT100: two each bearing • Frame stainless steel pipes • Type test	A3 A4 A5 A6 B1 C1 D2 E2 F1
	60 HZ 4 POLE 355-500				
	50 HZ 4 POLE 355-500				
	60 HZ 4 POLE 355-500				
Shell Sleeve Bearings	50 HZ 2 POLE 355-500	• TB PACK 2 • Stator RTDs PT100 (3 wire class B) • Space Heaters • Bearings RTDs PT100: one each bearing • Bently Nevada proximity provision • Bearing insulation de and nde side (**) • Frame aluminium pipes • Internal air purgin provision • Routine test • Exna IIB Certified	A2 - - D1 - E1 - -	• TB PACK 3 • TB PACK 4 • TB PACK 5 • TB PACK 6 • Phase separated Terminal box • Bently Nevada Terminal box • Bearings RTDs PT100: two each bearing • Frame stainless steel pipes • Type test	A3 A4 A5 A6 B1 C1 D2 E2 F1
	60 HZ 4 POLE 355-500				
	50 HZ 4 POLE 355-500				
	60 HZ 4 POLE 355-500				

(*) Drive end side bearing is uninsulated, not withstanding API 541 Vth edition, par. 4.4.7.1.8
(**) No shorting device can be provided in the bearing housing on the drive end, notwithstanding API 541 Vth edition, par. 4.4.7.1.8

Altitude

Our standard motors are built for operation up to 1.000 metres.
For different limits see table at right.

Other options	1.000 - 3.000	> 3.000
Code	Contact the factory	Contact the factory

Ambient Temperature

Nidec motors operate in an ambient temperature range between -20° and 40°.
For operation in temperature between 41° and 55° refer to the table at right.

Other options	41° - 55°
Code	Contact the factory

Bearing life

Our motor have a L-10 life, that means 85.000 hours.

Other options	L-20
Code	Contact the factory

Current Transformers

Use of Current Transformers need a modification of standard terminal boxes.
Contact the factory for this option.

Direction of Rotation

Standar Nidec motor have an uni-direction of rotation.

Other options	Bi-direction
Code	Contact the factory

Fan Covers

The standard material is carbon steel.

Other options	Not available
---------------	---------------

Burndy Lugs

All Nidec motor come standard with four lifting points.

Other options	Not available
---------------	---------------

Nameplates

Standard nameplates are 301-grade stainless steel with engraved lettering.
Additional nameplates for remote-mounting and special markings are available on request.

Soleplates

Soleplates are designed to spec. required, consult factory for quotation.

Stator RTDs

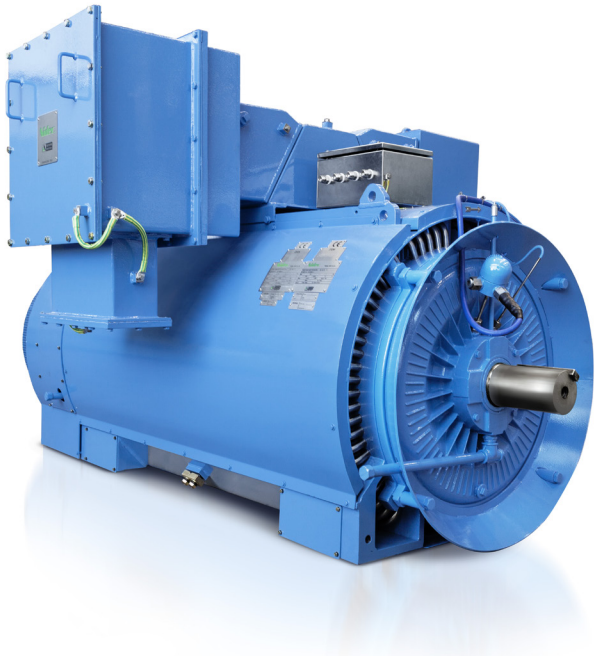
Standard temperature sensors are six PT100 class B. For other options contact the factory.

Velometers

The motor can be configured for the assembly of velometers on Roller Bearings.

Proximity

The motor can be configured for the assembly of Proximities on Sleeve Bearings.



CORPORATE

Viale Sarca, 336
I - 20126 Milano
Phone +39 02 6445 1
Fax +39 02 6445 4401

CUSTOMER SERVICE AND SUPPORT

Viale Sarca, 336
I - 20126 Milano
Phone +39 02 6445 4254
Fax +39 02 6445 4274
service@nidec-asi.com

For information on the sales office
or sales representative nearest you
contact us at: info@nidec-asi.com

www.nidec-asi.com