

AC Induction Servomotors

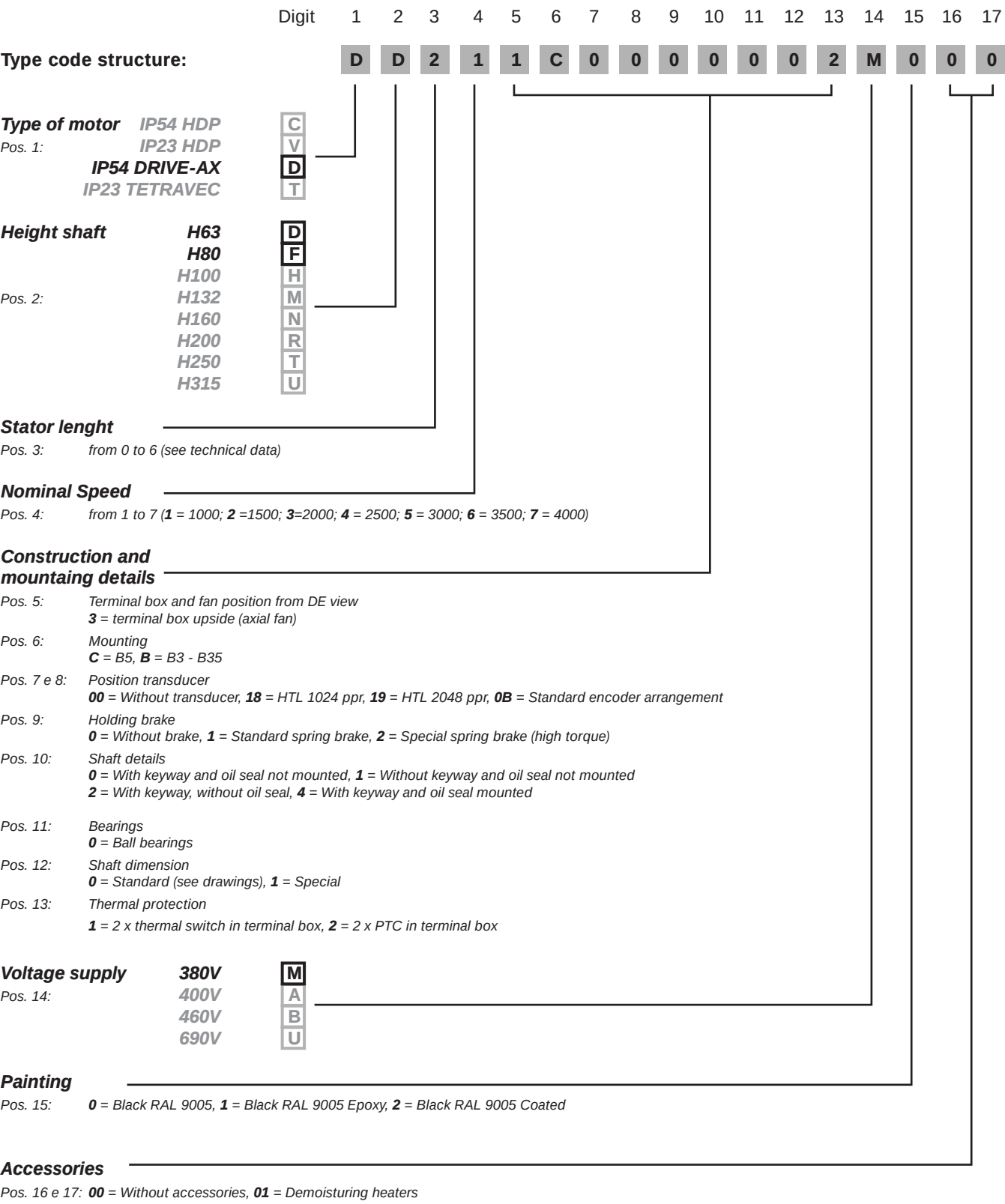
DRIVE-AX series, axis height H63 - H80
from 0,2 to 9,5 kW

Technical catalogue

604711/011



ABB



In black colour make your motor choice selecting: type/height shaft/Voltage supply



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AC Induction Servomotors



Generals

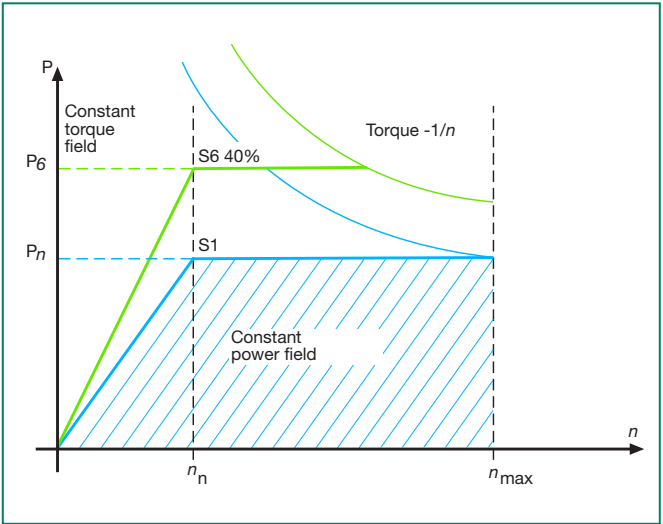
AC Induction Servomotors DRIVE-AX series, have been realized to operate especially with the modern frequency converter.

The stator frame, square form constructed on extruded aluminium frame, allow to this motors an excellent dynamic response due to the low moment of inertia and high pulse torque.

The motors can be equipped with optional mechanical integrated holding brake and a positioning encoder.

Main features

- IP54 protection degree like standard
- Standard type of construction IMB5
- Thermal class (Insulation class) F
- Ambient temperature range from 0 to +40°C
- Altitude of site $h < 1000$ m above sea level
- Relative air humidity $< 95\%$ (no condensation)
- Motor shaft available with or without keyway acc. to IEC 72
- Balancing Class: R acc.to ISO 2373 (reduced standard design)
- Natural air cooling, or with forced axial air fan cooling, 1-phase supply
- Position transducers: encoders HTL and TTL (1024 pulse/rev.; 5/10-30V standard)
- Standard painting RAL 9005 (black)
- Winding protection thermal switches (NC contacts) integrated in the winding overhang
- Number of motors poles 4
- Rated motor voltage 380V
- Max motor speed depending on bearings type
- Shielded and greased-for-life Ball Bearings as standard



Option

- Holding brake
- Special Temperature sensor
- Speed measure methods on customer specification
- Cooling methods with self-ventilation
- Special mounting systems (e.g.vertical mounting)

Industries and applications

DRIVE-AX servomotors are suitable for following application fields:

- Plastic and rubber
 - Calenders
 - Winders and Unwinders machine
- Printing
 - Web and label printing
 - Sheet - fed printing, commercial printing
- Paper and paperboard, film & foil converting
 - Calendering, slitte, coating
- Machine tools

Accessories



Holding brake

For special applications, DRIVE-AX series motor can be equipped with an embedded holding brake supplied with 24 Vdc, placed at the rear in a protected position. Spring operated brakes are brakes with two friction surfaces. By means of several pressure springs the brake friction is generated when no current is applied. The brakes are electro-magnetically released.

Technical data for holding brakes

Type	Standard brake [Nm]	Moment of inertia [kgcm ²]	Input power [W]	Max brakes speed [rpm]
H63	8	0,45	20	3000
H80	16	1,6	25	3000



Cooling fan

Motors are supplied with and without forced air cooling. Forced air cooling is supplied from a fan leaned in axial way with 1-phase voltage supply.

Technical data of the fan

Size	Rated voltage [V]	Power [W]	Current [A]	Protection degree
H63	1 x 230 (50 Hz)	40	0,2	IP54
H80	1 x 230 (50 Hz)	45	0,2	IP54

Thermal protection

Inside the motor normally are mounted two temperature sensors type KLIXON (N.C.contact). Upon request it is possibile to add other thermal sensor or replace the KLIXON with PTC thermal sensor.

- 2 Thermistors type klixon in terminal box as standard
- 2 PTC in terminal box upon request
- Other solutions on request (KTY,PT100,...)

Position transducer

Servomotors DRIVE-AX series,upon customer request can be equipped with position transducers.

Basic transducers:

- Encoder TTL 5V Output A+A-, B+B-, Z+Z-; 1024 ppr
- Encoder HTL 10/30V Output A+A-, B+B-, Z+Z-; 1024 ppr
- Encoder 1 Vpp sinusoidal 512/2048 ppr and absolute encoders (Endat o Hiperface)
- 2 poles resolver



Bearings

Bearings are designed for an average service life of 20000 operating hours.

Permissible radial loads

Size	Rated speed [rpm]	Max speed [rpm]	Rolling contact bearing type		Radial load	
			Drive End	Non Drive End	at n_n	at n_{max}
H63	3000	6000	6204-2Z-C3	6203-2Z-C3	600	480
H80			6205-2Z-C3	6204-2Z-C3	680	540



Technical data

DRIVE-AX Series natural air cooling, H63 – H80



Rated voltage 380 V

DD [H63 IP54]

Motor code			Duty S1						Duty S6 40%				General data		
Size code	Lenght code	Speed code	Nominal speed	FWP max. speed	Freq.	Nominal Power	Nominal Torque	Nominal Current	Power	Torque	Current	Max speed	Tmax/Tn	Inertia	Mech. limit speed
			n _n [rpm]	n _{max} [rpm]	f _n [Hz]	P _N [kW]	M _N [Nm]	I _N [A]	P _{S6} [kW]	M _{S6} [Nm]	I _{S6} [A]	n _{S6} [rpm]		J[kg m²]	n _{lim} [rpm]
DD	1	.1	1000	2200	35	0,3	2,6	0,8	0,4	3,6	1,1	1550	3,3	0,0017	15000
		.2	1500	3300	52	0,4	2,5	1,2	0,6	3,6	1,7	2350			
		.3	2000	4400	69	0,5	2,4	1,7	0,7	3,3	2,4	3100			
		.5	3000	6600	102	0,8	2,4	2,5	1,1	3,3	3,5	4650			
		.7	4000	8400	135	0,9	2,1	3,2	1,3	3,0	4,5	5900			
	2	.1	1000	2300	35	0,5	4,8	1,7	0,7	6,7	2,4	1650	3,5	2,3	
		.2	1500	3450	52	0,8	4,8	2,5	1,1	6,7	3,5	2450			
		.3	2000	4600	69	1,0	4,8	3,3	1,4	6,7	4,6	3250			
		.5	3000	6900	102	1,4	4,5	4,9	2,0	6,3	6,9	4850			
		.7	4000	8800	135	1,6	3,9	6,4	2,3	5,4	9,0	6200			

Rated voltage 380 V

DF [H80 IP54]

Motor code			Duty S1						Duty S6 40%				General data		
Size code	Lenght code	Speed code	Nominal speed	FWP max speed	Freq.	Nominal Power	Nominal Torque	Nominal Current	Power	Tourque	Current	Max speed	Tmax/Tn	Inertia	Mech. limit speed
			n _n [rpm]	n _{max} [rpm]	f _n [Hz]	P _N [kW]	M _N [Nm]	I _N [A]	P _{S6} [kW]	M _{S6} [Nm]	I _{S6} [A]	n _{S6} [rpm]		J[kg m²]	n _{lim} [rpm]
DF	1	.1	1000	2200	35	0,7	7,0	1,8	1,0	9,8	2,5	1550	3,3	0,0029	14000
		.2	1500	3300	52	1,1	7,0	2,7	1,5	9,8	3,8	2350			
		.3	2000	4400	69	1,4	6,7	3,6	2,0	9,4	5,0	3100			
		.5	3000	6300	101	2,0	6,4	5,1	2,8	8,9	7,1	4450			
		.7	4000	8400	135	2,5	5,9	6,8	3,4	8,2	9,5	5900			
	2	.1	1000	2300	35	1,0	9,6	2,5	1,4	13,4	3,5	1650	3,3	0,0040	
		.2	1500	3450	52	1,5	9,6	3,7	2,1	13,4	5,2	2450			
		.3	2000	4600	69	2,0	9,6	5,0	2,8	13,4	7,0	3250			
		.5	3000	6900	101	2,7	8,6	7,2	3,8	12,0	10,1	4850			
		.7	4000	8800	135	3,4	8,1	9,2	4,8	11,4	12,9	6200			
	3	.1	1000	2400	35	1,4	13,4	3,2	2,0	18,7	4,5	1700	3,3	0,0058	
		.2	1500	3600	52	2,1	13,4	4,9	2,9	18,7	6,9	2550			
		.3	2000	4800	69	2,8	13,4	6,6	3,9	18,7	9,2	3400			
		.5	2950	6800	100	3,8	12,3	9,3	5,3	17,2	13,0	4800			
		.7	4140	9000	139	5,0	11,5	12,8	7,0	16,1	17,9	6300			

DRIVE-AX Series axial fan air cooling, H63 – H80



Rated voltage 380 V

DD [H63 IP54]

Motor code			Duty S1						Duty S6 40%				General data		
Size code	Lenght code	Speed code	Nominal speed	FWP max speed	Freq.	Nominal Power	Nominal Torque	Nominal Current	Power	Tourque	Current	Max speed	Tmax/Tn	Inertia	Mech. limit speed
			n _n [rpm]	n _{max} [rpm]	f _n [Hz]	P _N [kW]	M _N [Nm]	I _N [A]	P _{S6} [kW]	M _{S6} [Nm]	I _{S6} [A]	n _{S6} [rpm]		J[kg m²]	n _{lim} [rpm]
DD	1	.1	1000	1700	36	0,5	4,3	1,5	0,6	6,0	2,1	1200	3,3	0,0017	15000
		.2	1500	2500	53	0,7	4,1	2,2	0,9	5,8	3,1	1800			
		.3	2000	3400	69	0,9	4,1	2,8	1,2	5,7	3,9	2400			
		.5	3000	5100	102	1,3	4,0	4,1	1,8	5,6	5,7	3600			
		.7	4000	6400	135	1,5	3,6	4,8	2,1	5,0	6,8	4500			
	2	.1	1000	1800	36	0,9	8,1	2,8	1,2	11,4	3,9	1300	3,3	0,0020	
		.2	1500	2700	53	1,2	7,6	4,0	1,7	10,7	5,6	1900			
		.3	2000	3600	69	1,6	7,6	5,2	2,2	10,7	7,3	2550			
		.5	3000	5400	102	2,2	7,0	7,0	3,1	9,8	9,8	3800			
		.7	4000	6400	135	2,6	6,2	8,2	3,6	8,7	11,5	4500			

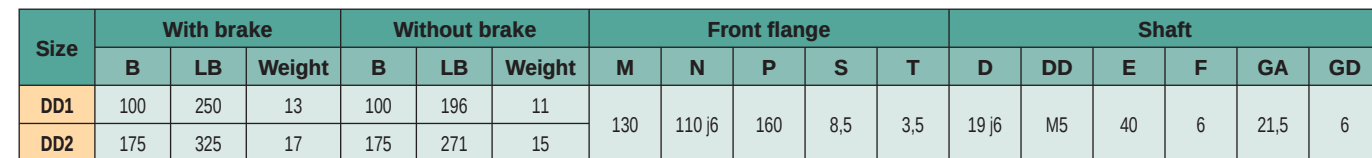
Rated voltage 380 V

DF [H80 IP54]

Motor code			Duty S1						Duty S6 40%				General data		
Size code	Lenght code	Speed code	Nominal speed	FWP max speed	Freq.	Nominal Power	Nominal Torque	Nominal Current	Power	Torque	Current	Max speed	Tmax/Tn	Inertia	Mech. limit speed
			n _n [rpm]	n _{max} [rpm]	f _n [Hz]	P _N [kW]	M _N [Nm]	I _N [A]	P ₆₀ [kW]	M ₆₀ [Nm]	I ₆₀ [A]	n ₆₀ [rpm]		J[kg m²]	n _{lim} [rpm]
DF	0	.1	960	1900	36	1,0	9,9	2,5	1,3	12,9	3,3	1100	3,3	0,0022	14000
		.2	1510	2600	54	1,5	9,5	3,6	2,0	12,3	4,7	1700			
		.3	2040	3400	72	2,0	9,4	4,8	2,6	12,2	6,2	2400			
		.5	3020	4300	105	2,7	8,5	6,5	3,5	11,1	8,5	3300			
		.7	3900	4600	133	3,4	8,3	8,0	4,4	10,8	10,4	4300			
	1	.1	1000	1600	37	1,4	13,4	3,5	2,0	18,7	4,9	1150	3,3	0,0029	
		.2	1550	2500	55	2,2	13,6	5,0	3,1	19,0	7,0	1750			
		.3	2025	3450	71	2,8	13,2	6,9	3,9	18,5	9,7	2450			
		.5	3035	4900	105	3,9	12,3	9,0	5,5	17,2	12,6	3450			
		.7	4000	6400	137	4,8	11,5	11,2	6,7	16,0	15,7	4500			
	2	.1	1020	1750	38	2,0	18,7	5,0	2,8	26,2	7,0	1250	3,3	0,0040	
		.2	1510	2750	54	3,0	19,0	7,0	4,2	26,6	9,8	1950			
		.3	2130	3850	74	4,0	17,9	9,5	5,6	25,1	13,3	2700			
		.5	3080	5250	105	5,3	16,4	12,4	7,4	23,0	17,4	3700			
		.7	4140	7050	141	6,8	15,7	16,1	9,5	22,0	22,5	4950			
	3	.1	1030	1900	38	2,8	26,0	6,8	3,9	36,3	9,5	1350	3,3	0,0058	
		.2	1520	2750	54	4,1	25,8	9,8	5,7	36,1	13,7	1950			
		.3	2150	3900	75	5,7	25,3	13,6	8,0	35,5	19,0	2750			
		.5	3190	5750	110	7,7	23,1	17,9	10,8	32,3	25,1	4050			
		.7	4170	7100	142	9,5	21,8	22,7	13,3	30,5	31,8	5000			

For further details and for motor curves, see technical manual

DRIVE-AX Series natural air cooling, H63 – H80

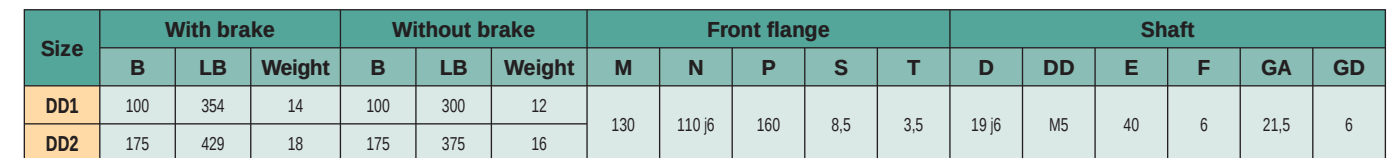


Size	With brake			Without brake			Front flange					Shaft					
	B	LB	Weight	B	LB	Weight	M	N	P	S	T	D	DD	E	F	GA	GD
DF1	100	289	17	100	235	14	165	130 j6	200	11,5	3,5	24 j6	M8	50	8	27	7
DF2	145	334	19	145	280	16											
DF3	215	404	24	215	350	22											

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DD [H63 IP54]



Size	With brake			Without brake			Front flange					Shaft					
	B	LB	Weight	B	LB	Weight	M	N	P	S	T	D	DD	E	F	GA	GD
DF0	70	n.a.	n.a.	70	370	14	165	130 j6	200	11,5	3,5	24 j6	M8	50	8	27	7
DF1	145	475	21	145	400	16											
DF2	215	520	23	215	445	18											
DF3	215	590	29	215	515	24											

ABB SACE

ABB Motors – Global offer

ABB offers several comprehensive ranges of AC motors and generators. We manufacture synchronous motors for even the most demanding applications, and a full range of low and high voltage induction motors.

Our in-depth knowledge of every type of industrial processing allow us to supply the best solution for each kind of application. ABB offers several comprehensive ranges of AC motors and generators.



Low voltage motors and generators

General purpose motors for standard application

- Aluminum motors
- Steel motors
- Cast iron motors
- Open drip proof motors
- Global motors
- Brake motors
- Single phase motors

Process performance motors for more demanding application

- Aluminum motors
- Cast iron motors
- Motors for high ambient temperatures

Motors for hazardous areas

- Flameproof motors
- Increased safety motors
- Non-sparking motors
- Dust ignition proof motors

Marine motors

- Aluminum motors
- Steel motors
- Cast iron motors
- Open drip proof motors

Other applications

- Permanent magnet motors
- High speed motors
- Wind turbine generators
- Smoke venting motors
- Water cooled motors
- Motors for roller table drives

NEMA motors

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- High voltage cast iron motors
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- Slip ring motors
- Motors for hazardous areas
- Servomotors
- Synchronous motors and generators
- DC motors and generators

Contacts and web information

www.abb.com/motors&drives

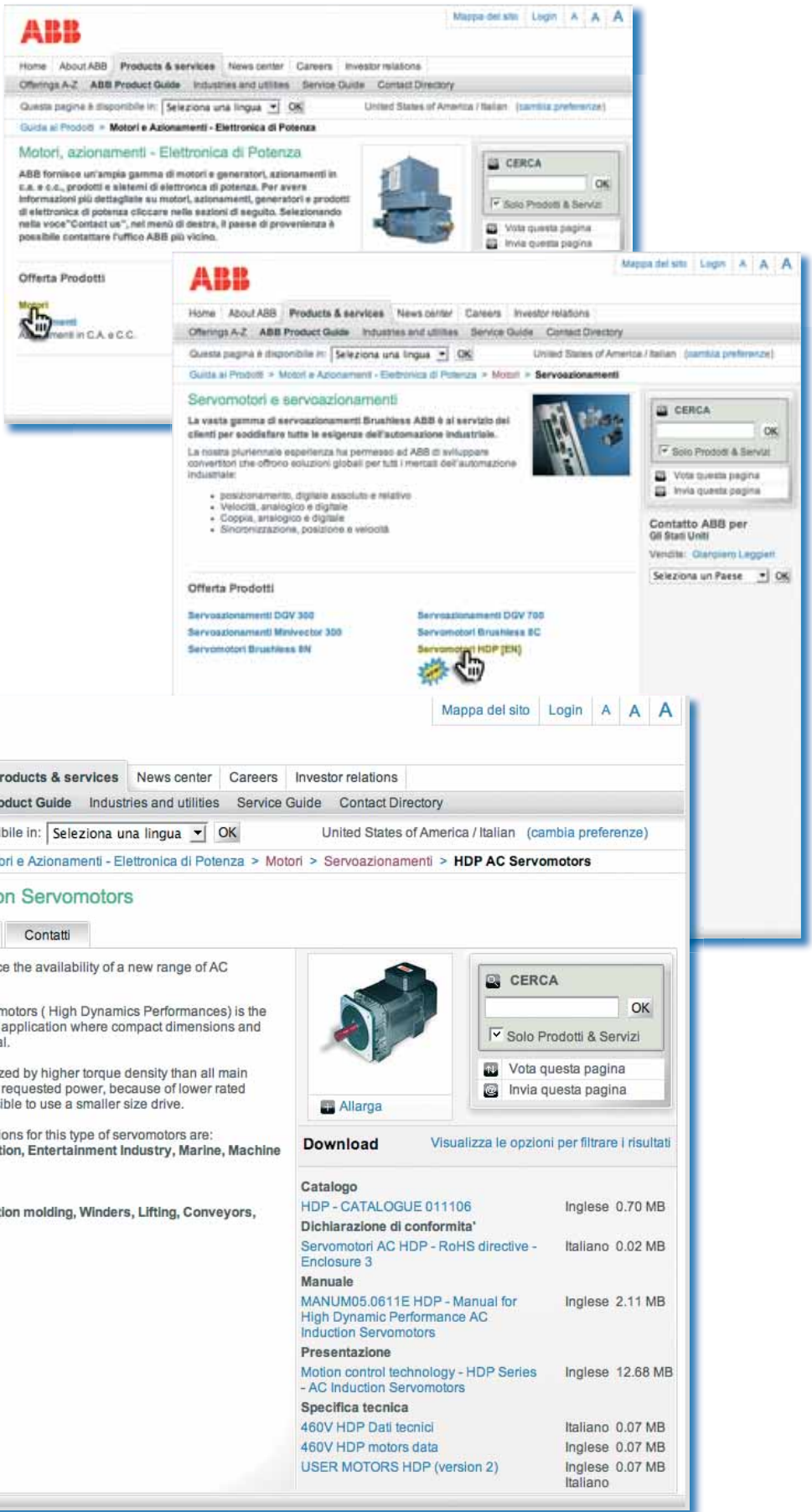




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Due to possible developments of standards as well as of materials, the characteristics and dimensions specified in the present catalogue may only be considered binding after confirmation by ABB SACE.

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