

Construction Features

Frame		63	71	80	90	100	112	132	160	180		
Mechanical features												
Mounting		B3T										
Frame material		FC-200 cast iron										
Degree of protection		IP55										
Grounding		Simple grounding - one earth terminal inside the terminal box										
Cooling method		Totally enclosed fan cooled - IC411										
Fan material	2P	Polypropylene										
	4 - 12P											
Fan cover material		Steel						FC-200 cast iron				
Endshields material		FC-200 cast iron										
Drain hole	IP55/IP56	Automatic T labyrinth drain plug										
	IP65/IP66	Rubber drain plug										
Bearings	Drive end side	2p	6201-ZZ	6202-ZZ	6204-ZZ	6205-ZZ	6206-ZZ	6207-ZZ	6308-ZZ	6309-ZZ-C3	6311-ZZ-C3	
		4 - 12p			6203-ZZ	6204-ZZ	6205-ZZ	6206-ZZ	6207-ZZ	6209-ZZ-C3	6211-ZZ-C3	
	Non drive end side	2p			Without bearing cap and with spring washer at NDE							
		4 - 12p										
Locking												
Shaft Seal		V' Ring										
Lubrication	Type of grease - 50Hz		Mobil Polyrex EM									
	Type of grease - 60Hz - 2P											
	Type of grease - 60Hz (4P and above)		Mobil Polyrex EM									
	Grease fitting		Without grease fitting									
Terminal block		BMC terminal block										
Terminal box material		FC-200 cast iron										
Cable entries	Main	Size	2xM20x1,5		2xM25x1,5		2xM32x1,5		2xM40x1,5			
	Threaded plug		Plastic plug for transport and storage purposes									
	Accessory	Size	1xM20x1,5 lateral threaded hole when fitted with accessories									
Shaft	Material		SAE 1040/45									
	DE Threaded hole	2p	M4	M5	M6	M8	M10	M10	M12	M16		
		4 - 12p										
Direction of rotation		Bidirectional										
Vibration level		Grade A										
Nameplate material		Stainless steel AISI 304										
Painting	Type		207 A						203 A			
	Performance Criteria		Corrosive category C3 according to DIN EN ISO 12944-2									
	Colour		RAL 5009									
Electrical features												
Design	50Hz e 60Hz (IE1/IE2/IE3)		N									
	60Hz (IE4)											
	50Hz (IE4)		NE									
	50Hz (IE5)		NONE									
Voltage / Frequency		220-240/380-415//460 V (50 // 60Hz)					380-415/660//460 V (50 // 60Hz)					
Winding	Impregnation		Dip and bake									
	Insulation class		F (DT 80K)									
Service factor	50Hz (IE1, IE2, IE3, IE4, IE5)		1,00									
	60Hz (IE1, IE2)		1,15									
	60Hz (IE3)		1,25									
Rotor		Aluminium die cast										
Thermal protection		Without thermal protection						PTC Thermistor - 155°C				

Frame		200	225S/M	250S/M	280S/M	315S/M	315L	355M/L	355A/B			
Mechanical features												
Mounting		B3T										
Frame material		FC-200 cast iron										
Degree of protection		IP55										
Grounding		Simple grounding - one earth terminal inside the terminal box	Double grounding - one earth terminal inside the terminal box and another on the motor frame									
Cooling method		Totally enclosed fan cooled - IC411										
Fan material		2p	Polypropylene						Aluminium			
		4-12p	Polypropylene									
Fan cover material		FC-200 cast iron										
Endshields material		FC-200 cast iron										
Drain hole		IP55/IP56	Automatic T labyrinth drain plug									
		IP65/IP66	Rubber drain plug									
Bearings		Drive end side	2p	6312-ZZ-C3	6314-C3	6314-C3	6314-C3	6314-C3	6314-C3	6316-C3	6316-C3	
			4 - 12p				6316-C3	6319-C3	6319-C3	6322-C3	6322-C3	
		Non drive end side	2p	6212-ZZ-C3	6314-C3	6314-C3	6314-C3	6314-C3	6314-C3	6314-C3	6314-C3	6314-C3
			4 - 12p				6316-C3	6316-C3	6316-C3	6319-C3	6319-C3	
Locking		Internal bearing cap at DE with spring washer at NDE		Locked on drive end with internal and external bearing cap and with preload springs on NDE								
Shaft Seal		V' Ring		WSeal®								
Lubrication		Grease Type - 50Hz		Mobil Polyrex EM								
		Grease Type - 60Hz - 2P		Mobil Polyrex EM				Isoflex NBU 15				
		Grease Type - 60Hz - (4P and above)		Mobil Polyrex EM								
		Grease fitting		Without grease fitting		With grease fitting (at DE and NDE)						
Terminal block		BMC terminal block								HGF staggered terminal block		
Terminal box material		FC-200 cast iron										
Cable entries		Main	Size	2xM50x1,5	2xM63x1,5		2xM63x1,5 (removable gland plate)	2xM80x2 (removable gland plate)				
		Threaded plug		Plastic plug for transport and storage purposes								
		Accessory	Size	1xM20x1,5 lateral threaded hole when fitted with accessories								
Shaft		Material		SAE 1040/45			SAE 4140					
		DE Threaded hole	2p	M20				M20				
			4 - 12p	M20				M24				
Direction of rotation		Bidirectional										
Vibration level		Grade A										
Nameplate material		Stainless steel AISI 304										
Painting		Type		203 A								
		Performance Criteria		Corrosive category C3 according to DIN EN ISO 12944-2								
		Colour		RAL 5009								
Electrical features												
Design		50Hz e 60Hz (IE1/IE2/IE3)		N								
		60Hz (IE4)		NE								
		50Hz (IE4)		NONE								
		50Hz (IE5)		NONE								
Voltage / Frequency		380-415/660//460 V (50 // 60Hz)										
Winding		Impregnation		Dip and bake	Continuous flow impregnation							
		Insulation class		F (DT 80K)								
Service factor		50Hz (IE1, IE2, IE3, IE4, IE5)		1,00								
		60Hz (IE1, IE2)		1,15				1,00				
		60Hz (IE3)		1,25		1,15		1,00				
		60Hz (IE4)		-		1,25		1,15		1,00		
Rotor		Aluminium die cast										
Thermal protection		PTC Thermistor - 155°C										

* Multi-voltage 50/60Hz motors are provided with Mobil Polyrex EM grease as standard. For spot wound, 2 pole, 60Hz motors in frame sizes 355M/L and 355A/B, Kluber Isoflex NBU 15 will be supplied.

Optional Features

Frame	63	71	80	90	100	112	132
Mechanical options							
Terminal box							
Auxiliary terminal box (thermal protection)	0	0	0	0	0	0	0
Auxiliary terminal box (heaters)	0*	0*	0*	0*	0*	0*	0
Terminal box with removable gland plate	NA	NA	NA	NA	NA	NA	NA
Oversized Terminal Box	NA	NA	NA	NA	NA	NA	NA
Terminal block							
BMC terminal block - six-pin	S	S	S	S	S	S	S
BMC terminal block - twelve-pin	NA	NA	0	0	0	0	0
HGF staggered terminal block	NA	NA	NA	NA	NA	NA	NA
Cable glands							
Plastic cable gland	0	0	0	0	0	0	0
Brass cable gland	0	0	0	0	0	0	0
Stainless steel cable gland	NA	NA	NA	0	0	0	0
Flange							
Flange FF (IEC)	0	0	0	0	0	0	0
Flange FF (IEC) - superior	0	0	0	0	0	0	0
Flange FF (IEC) - inferior	NA	0	0	0	0	0	0
Flange C-DIN (IEC)	0	0	0	0	0	0	0
Flange C-DIN (IEC) - superior	0	0	0	0	0	0	NA
Flange C-DIN (IEC) - inferior	NA	0	0	0	0	NA	0
Flange C (NEMA)	0	0	0	0	0	0	0
Flange D (NEMA)	0	0	0	0	0	0	0
Flange D (NEMA) - superior	0	0	0	0	0	0	0
Flange D (NEMA) - inferior	NA	0	0	0	0	0	0
Flange C (NEMA) - superior	0	0	0	0	0	NA	0
Flange C (NEMA) - inferior	NA	NA	NA	0	0	0	0
Cooling fan							
Polypropylene (2 pole)	S	S	S	S	S	S	S
Polypropylene (4 pole and above)	S	S	S	S	S	S	S
Conductive plastic (2 pole)	0	0	0	0	0	0	0
Conductive plastic (4 pole and above)	0	0	0	0	0	0	0
Aluminium (2 pole)	0	0	0	0	0	0	0
Aluminium (4 pole and above)	0	0	0	0	0	0	0
Cast iron	0	0	0	0	0	0	0
Bronze	0*	0*	0	0	0	0	0
Bearings							
ZZ ball bearings at both ends	S	S	S	S	S	S	S
ZZ-C3 ball bearings at both ends	0	0	0	0	0	0	0
C3 ball bearings at both ends	NA	NA	NA	NA	NA	NA	NA
2RS ball bearings at both ends	0	0	0	0	0	0	0
Without bearing cap at DE	S	S	S	S	S	S	S
With bearing cap at DE	NA	0	0	0	0	0	0
Roller bearing at DE	NA	NA	NA	NA	NA	NA	0
Shaft sealing							
Nitrilic rubber lip seal	0	0	0	0	0	0	0
Nitrilic rubber oil seal	0	0	0	0	0	0	0
Viton lip seal	0	0	0	0	0	0	0
Viton oil seal	0	0	0	0	0	0	0
Taconite labyrinth	NA	NA	NA	0	0	0	0
W3 Seal® (brass)	NA	NA	NA	0	0	0	0
INPRO/SEAL	NA	NA	NA	0	0	0	0
Other sealing							
Joints sealing with Loctite 5923 (permatex)	0	0	0	0	0	0	0
Bolt sealing with Loctite 5923 (permatex)	0	0	0	0	0	0	0
Degree of protection							
IP56	0	0	0	0	0	0	0
IP65	0	0	0	0	0	0	0
IP66	0	0	0	0	0	0	0

Notes: Other optional features, on request. Some combinations of optional features are not possible.

S - Standard

O - Optional

O* Optional (feature available upon request)

NA - Not available

Frame	160	180	200	225S/M	250S/M	280S/M	315S/M	315L	355M/L	355A/B
Mechanical options										
Terminal box										
Auxiliary terminal box (thermal protection)	0	0	0	0	0	0	0	0	0	0
Auxiliary terminal box (heaters)	0	0	0	0	0	0	0	0	0	0
Terminal box with removable gland plate	0 ¹	0 ¹	0 ¹	0	0	0	0	S	S	S
Oversized Terminal Box	NA	NA	NA	0	0	0	0	0	0	0
Terminal block										
BMC terminal block - six-pin	S	S	S	S	S	S	S	S	S	NA
BMC terminal block - twelve-pin	0	0	0	0	0	0	0	0	0	NA
HGF staggered terminal block	NA	NA	NA	NA	NA	NA	NA	NA	NA	S
Cable glands										
Plastic cable gland	0	0	0	0	0	0	0	0	0	0
Brass cable gland	0	0	0	0	0	0	0	0	0	0
Stainless steel cable gland	0	0	0	0	0	0	0	0	0	0
Flange										
Flange FF (IEC)	0	0	0	0	0	0	0	0	0	0
Flange FF (IEC) - superior	0	0	0	NA	NA	0	NA	NA	NA	NA
Flange FF (IEC) - inferior	0	0	0	0	0	NA	0	0	NA	NA
Flange C-DIN (IEC)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Flange C-DIN (IEC) - superior	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Flange C-DIN (IEC) - inferior	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Flange C (NEMA)	0	0	0	0	0	0	0	0	0	NA
Flange D (NEMA)	0	0	0	0	0	0	0	0	0	0
Flange D (NEMA) - superior	0	0	0	NA	NA	0	NA	NA	NA	NA
Flange D (NEMA) - inferior	0	0	0	0	0	NA	0	0	NA	NA
Flange C (NEMA) - superior	NA	0	0	NA	NA	0	NA	NA	NA	NA
Flange C (NEMA) - inferior	NA	NA	NA	NA	0	NA	0	0	NA	NA
Cooling fan										
Polypropylene (2 pole)	S	S	S	S	S	S	S	S	S	NA
Polypropylene (4 pole and above)	S	S	S	S	S	S	S	NA	NA	NA
Conductive plastic (2 pole)	0	0	0	0	0	0	0	0	0	NA
Conductive plastic (4 pole and above)	0	0	0	0	0	0	0	NA	NA	NA
Aluminium (2 pole)	0	0	0	0	0	0	0	0	0	S
Aluminium (4 pole and above)	0	0	0	0	0	0	0	S	S	S
Cast iron	0	0	0	0	0	0	0	0	0	0
Bronze	0	0	0	0	0	0	0	0	0	0
Bearings										
ZZ ball bearings at both ends	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZZ-C3 ball bearings at both ends	S	S	S	NA	NA	NA	NA	NA	NA	NA
C3 ball bearings at both ends	NA	NA	NA	S	S	S	S	S	S	S
2RS ball bearings at both ends	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Without bearing cap at DE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
With bearing cap at DE	S	S	S	S	S	S	S	S	S	S
Roller bearing at DE	0	0	0	0	0	0	0	0	0	0
Shaft sealing										
Nitrilic rubber lip seal	0	0	0	0	0	0	NA	NA	NA	NA
Nitrilic rubber oil seal	0	0	0	0	0	0	NA	NA	NA	NA
Viton lip seal	0	0	0	0	0	0	0	0	0	0
Viton oil seal	0	0	0	0	0	0	0	0	0	0
Taconite labyrinth	0	0	0	0	0	0	0	0	0	0
W3 Seal® (brass)	0	0	0	0	0	0	0	0	0	0
INPRO/SEAL	0	0	0	0	0	0	0	0	0	0
Other sealing										
Joints sealing with Loctite 5923 (permatex)	0	0	0	0	0	0	0	0	0	0
Bolt sealing with Loctite 5923 (permatex)	0	0	0	0	0	0	0	0	0	0
Degree of protection										
IP56	0	0	0	0	0	0	0	0	0	0
IP65	0	0	0	0	0	0	0	0	0	0
IP66	0	0	0	0	0	0	0	0	0	0

1) Option available for motors utilizing W21 terminal box.

Frame	63	71	80	90	100	112	132
Shaft							
AISI 1040/45	S	S	S	S	S	S	S
AISI 4140	0	0	0	0	0	0	0
AISI 304 (stainless steel)	0	0	0	0	0	0	0
AISI 316 (stainless steel)	0	0	0	0	0	0	0
AISI 420 (stainless steel)	0	0	0	0	0	0	0
Shaft locking device (standard for roller bearing motors)	NA	NA	NA	NA	NA	NA	0
Second shaft end	0	0	0	0	0	0	0
Painting plan							
202P Primer: One coat with 20 to 55 µm of alkyd red oxide. Intermediate: One coat with 20 to 30 µm of isocyanate epoxy paint. / Finishing: One coat with 70 to 100 µm of polyurethane paint N2677. / Meets atmospheric corrosive category "C3" as indicated in DIN EN ISO 12944-2.	0	0	0	0	0	0	0
211E Primer: One coat with 100 to 140 µm of epoxy paint N2630. / Finishing: One coat with 100 to 140 µm of epoxy paint N2628. / Meets atmospheric corrosive categories C5 (I and M) as indicated in DIN EN ISO 12944-2.	0	0	0	0	0	0	0
211P Primer: One coat with 100 to 140 µm of epoxy paint N2630. / Finishing: One coat with 70 to 100 µm of polyurethane paint N2677. / Meets atmospheric corrosive categories C5 (I and M) as indicated in DIN EN ISO 12944-2.	0	0	0	0	0	0	0
212E Primer: One coat with 75 to 105 µm of epoxy paint N1277. Intermediate: One coat with 100 to 140 µm of epoxy paint N2630. / Finishing: One coat with 100 to 140 µm of epoxy paint N2628. / Meets atmospheric corrosive categories C5 (I and M) as indicated in DIN EN ISO 12944-2.	0	0	0	0	0	0	0
212P Primer: One coat with 75 to 105 µm of epoxy paint N1277. Intermediate: One coat with 100 to 140 µm of epoxy paint N2630. / Finishing: One coat with 70 to 100 µm of polyurethane paint N2677. / Meets atmospheric corrosive categories C5 (I and M) as indicated in DIN EN ISO 12944-2.	0	0	0	0	0	0	0
213E Primer: One coat with 75 to 90 µm of Silicate Ethyl paint N1661. / Intermediate: One coat with 35 to 50 µm of epoxy paint N1202. / Finishing: One coat with 240 to 340 µm of epoxy paint N2628. / Meets atmospheric corrosive categories C5 (I and M) as indicated in DIN EN ISO 12944-2.	0	0	0	0	0	0	0
Inside of terminal box painted	0	0	0	0	0	0	0
Internal tropical protection - complete	0	0	0	0	0	0	0
Grease / Lubrication							
Grease - Aeroshell 7	0*	0*	0*	0*	0*	0*	0*
Grease - Isoflex NBU-15	0	0	0	0	0	0	0
Grease - Aeroshell 22	0	0	0	0	0	0	0
Carbon steel grease nipple	NA	NA	NA	0	0	0	0
Stainless steel grease nipple	NA	NA	NA	0	0	0	0
Balance and Vibration							
Balance without key	0	0	0	0	0	0	0
Balance with full key	0	0	0	0	0	0	0
Vibration level grade B	0	0	0	0	0	0	0
Provision for vibration detector SPM (1 x hole M8 on DE and NDE shield for vertical reading)	NA	NA	NA	0	0	0	0
Key Type A	S	S	S	S	S	S	S
Key Type B	0*	0*	0*	0*	0*	0*	0*
Key Type C	0*	0*	0*	0*	0	0	0
Drain							
Stainless steel threaded drain plug	0	0	0	0	0	0	0
"T" format threaded drain plug	0	0	0	0	0	0	0

Notes: Other optional features, on request.

Some combinations of optional features are not possible.

S - Standard

O - Optional

0* Optional (feature available upon request)

NA - Not available

Frame	160	180	200	225S/M	250S/M	280S/M	315S/M	315L	355M/L	355A/B
Shaft										
AISI 1040/45	S	S	S	S	S	S	S	NA	NA	NA
AISI 4140	0	0	0	0	0	0	0	S	S	S
AISI 304 (stainless steel)	0	0	0	0	0	0	0	0	0	0
AISI 316 (stainless steel)	0	0	0	0	0	0	0	0	0	0
AISI 420 (stainless steel)	0	0	0	0	0	0	0	0	0	0
Shaft locking device (standard for roller bearing motors)	0	0	0	0	0	0	0	0	0	0
Second shaft end	0	0	0	0	0	0	0	0	0	0
Painting plan										
202P Primer: One coat with 20 to 55 µm of alkyd red oxide. Intermediate: One coat with 20 to 30 µm of isocyanate epoxy paint. / Finishing: One coat with 70 to 100 µm of polyurethane paint N2677. / Meets atmospheric corrosive category "C3" as indicated in DIN EN ISO 12944-2.	0	0	0	0	0	0	0	0	0	0
211E Primer: One coat with 100 to 140 µm of epoxy paint N2630. / Finishing: One coat with 100 to 140 µm of epoxy paint N2628. / Meets atmospheric corrosive categories C5 (I and M) as indicated in DIN EN ISO 12944-2.	0	0	0	0	0	0	0	0	0	0
211P Primer: One coat with 100 to 140 µm of epoxy paint N2630. / Finishing: One coat with 70 to 100 µm of polyurethane paint N2677. / Meets atmospheric corrosive categories C5 (I and M) as indicated in DIN EN ISO 12944-2.	0	0	0	0	0	0	0	0	0	0
212E Primer: One coat with 75 to 105 µm of epoxy paint N1277. Intermediate: One coat with 100 to 140 µm of epoxy paint N2630. / Finishing: One coat with 100 to 140 µm of epoxy paint N2628. / Meets atmospheric corrosive categories C5 (I and M) as indicated in DIN EN ISO 12944-2.	0	0	0	0	0	0	0	0	0	0
212P Primer: One coat with 75 to 105 µm of epoxy paint N1277. Intermediate: One coat with 100 to 140 µm of epoxy paint N2630. / Finishing: One coat with 70 to 100 µm of polyurethane paint N2677. / Meets atmospheric corrosive categories C5 (I and M) as indicated in DIN EN ISO 12944-2.	0	0	0	0	0	0	0	0	0	0
213E Primer: One coat with 75 to 90 µm of Silicate Ethyl paint N1661. / Intermediate: One coat with 35 to 50 µm of epoxy paint N1202. / Finishing: One coat with 240 to 340 µm of epoxy paint N2628. / Meets atmospheric corrosive categories C5 (I and M) as indicated in DIN EN ISO 12944-2.	0	0	0	0	0	0	0	0	0	0
Inside of terminal box painted	0	0	0	0	0	0	0	0	0	0
Internal tropical protection - complete	0	0	0	0	0	0	0	0	0	0
Grease / Lubrication										
Grease - Aeroshell 7	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*
Grease - Isoflex NBU-15	0	0	0	0	0	0	0	0	0	0
Grease - Aeroshell 22	0	0	0	0	0	0	0	0	0	0
Carbon steel grease nipple	0	0	0	S	S	S	S	S	S	S
Stainless steel grease nipple	0	0	0	0	0	0	0	0	0	0
Balance and Vibration										
Balance without key	0	0	0	0	0	0	0	0	0	0
Balance with full key	0	0	0	0	0	0	0	0	0	0
Vibration level grade B	0	0	0	0	0	0	0	0	0	0
Provision for vibration detector SPM (1 x hole M8 on DE and NDE shield for vertical reading)	0	0	0	0	0	0	0	0	0	0
Key Type A	S	S	S	0*	0*	0*	0*	0*	0*	0*
Key Type B	0*	0*	0*	S	S	S	S	S	S	S
Key Type C	0	0	0	0	0	0	0	0	0	0
Drain										
Stainless steel threaded drain plug	0	0	0	0	0	0	0	0	0	0
"T" format threaded drain plug	0	0	0	0	0	0	0	0	0	0

Notes: Other optional features, on request.

Some combinations of optional features are not possible.

S - Standard

O - Optional

O* Optional (feature available upon request)

NA - Not available

Frame	63	71	80	90	100	112	132
Grounding							
Double grounding (one inside terminal box and another on the motor frame)	0	0	0	0	0	0	0
Triple grounding (one inside terminal box, two on the motor frame)	NA	NA	0	0	0	0	0
Nameplates							
Second main nameplate (loose)	0	0	0	0	0	0	0
Additional / Tag plate	0	0	0	0	0	0	0
VSD rating plate	0	0	0	0	0	0	0
Direction of Rotation plate	0	0	0	0	0	0	0
Other mechanical optionals							
Drip cover (recommended for vertical shaft down applications)	0	0	0	0	0	0	0
Rubber slinger (recommended for vertical shaft up applications)	NA	NA	NA	0	0	0	0
Stainless steel hardware	0	0	0	0	0	0	0
Grease outlet through the endshield	NA	NA	NA	0*	0*	0*	0*
Without cooling fan - IC 418 (TEAO) or IC 410 (TENV)	0*	0*	0*	0*	0*	0*	0*
Loose leads in lieu of t/box (up to 2 metres)	0	0	0	0	0	0	0
Electrical optionals							
Winding thermal protection							
Thermostat - alarm / trip (NO or NC) - 130 °C	0	0	0	0	0	0	0
Thermostat - alarm / trip (NO or NC) - 155 °C	0	0	0	0	0	0	0
Thermostat - trip (NO or NC) - 180 °C	0	0	0	0	0	0	0
Pt-100 two wires, one per phase	0	0	0	0	0	0	0
Pt-100 two wires, two per phase	0	0	0	0	0	0	0
Pt-100 three wires, one per phase	0	0	0	0	0	0	0
Pt-100 three wires, two per phase	0	0	0	0	0	0	0
PTC Thermistor - alarm/trip (130 °C)	0	0	0	0	0	0	0
PTC Thermistor - alarm/trip (155 °C)	0	0	0	0	0	0	0
PTC Thermistor - trip (180 °C)	0	0	0	0	0	0	0
Bearing thermal protection							
Thermostat, one per bearing	NA	NA	NA	0*	0*	0*	0*
PTC Thermistor, one per bearing	NA	NA	NA	0*	0*	0*	0*
Pt-100 two wires, one per bearing	NA	NA	NA	0*	0*	0*	0*
Pt-100 three wires, one per bearing	NA	NA	NA	0*	0*	0*	0*
Pt-100 three wires (calibrated)	NA	NA	NA	0*	0*	0*	0*
Space heaters							
110-127 V	0	0	0	0	0	0	0
220-240 V	0	0	0	0	0	0	0
110-127 / 220-240 V	0	0	0	0	0	0	0
380-480 V	0	0	0	0	0	0	0
Service factor							
Service factor 1,15	0	0	0	0	0	0	0
Insulation class							
H	0	0	0	0	0	0	0
Variable Speed Options							
Forced ventilation kit with encoder provision (inform auxiliary motor voltage)	NA	NA	NA	0	0	0	0
Forced ventilation kit without encoder provision (inform auxiliary motor voltage)	NA	NA	NA	0	0	0	0
Encoder	NA	NA	NA	0	0	0	0
DE side shaft grounding brush	NA	NA	NA	NA	NA	NA	NA
NDE side shaft grounding brush	NA	NA	NA	NA	NA	NA	NA
Insulated DE ball bearing	NA	NA	NA	NA	NA	NA	NA
Insulated NDE ball bearing	NA	NA	NA	NA	NA	NA	NA
Insulated DE bearing hub	NA	NA	NA	NA	NA	NA	NA
Insulated NDE bearing hub	NA	NA	NA	NA	NA	NA	NA

Notes: Other optional features, on request.

Some combinations of optional features are not possible.

S - Standard

O - Optional

O* Optional (feature available upon request)

NA - Not available

Frame	160	180	200	225S/M	250S/M	280S/M	315S/M	315L	355M/L	355A/B
Grounding										
Double grounding (one inside terminal box and another on the motor frame)	0	0	0	S	S	S	S	S	S	S
Triple grounding (one inside terminal box, two on the motor frame)	0	0	0	0	0	0	0	0	0	0
Nameplates										
Second main nameplate (loose)	0	0	0	0	0	0	0	0	0	0
Additional / Tag plate	0	0	0	0	0	0	0	0	0	0
VSD rating plate	0	0	0	0	0	0	0	0	0	0
Direction of Rotation plate	0	0	0	0	0	0	0	0	0	0
Other mechanical options										
Drip cover (recommended for vertical shaft down applications)	0	0	0	0	0	0	0	0	0	0
Rubber slinger (recommended for vertical shaft up applications)	0	0	0	0	0	0	0	0	0	0
Stainless steel hardware	0	0	0	0	0	0	0	0	0	0
Grease outlet through the endshield	0*	0*	0*	0	0	0	0	0	0	0
Without cooling fan - IC 418 (TEAO) or IC 410 (TENV)	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*
Loose leads in lieu of t/box (up to 2 metres)	0	0	0	0	0	0	0	0	0	0
Electrical options										
Winding thermal protection										
Thermostat - alarm / trip (NO or NC) - 130 °C	0	0	0	0	0	0	0	0	0	0
Thermostat - alarm / trip (NO or NC) - 155 °C	0	0	0	0	0	0	0	0	0	0
Thermostat - trip (NO or NC) - 180 °C	0	0	0	0	0	0	0	0	0	0
Pt-100 two wires, one per phase	0	0	0	0	0	0	0	0	0	0
Pt-100 two wires, two per phase	0	0	0	0	0	0	0	0	0	0
Pt-100 three wires, one per phase	0	0	0	0	0	0	0	0	0	0
Pt-100 three wires, two per phase	0	0	0	0	0	0	0	0	0	0
PTC Thermistor - alarm/trip (130 °C)	0	0	0	0	0	0	0	0	0	0
PTC Thermistor - alarm/trip (155 °C)	S	S	S	S	S	S	S	S	S	S
PTC Thermistor - trip (180 °C)	0	0	0	0	0	0	0	0	0	0
Bearing thermal protection										
Thermostat	0	0	0	0	0	0	0	0	0	0
PTC Thermistor	0	0	0	0	0	0	0	0	0	0
Pt-100 two wires, one per bearing	0	0	0	0	0	0	0	0	0	0
Pt-100 three wires, one per bearing	0	0	0	0	0	0	0	0	0	0
Pt-100 three wires (calibrated)	0	0	0	0	0	0	0	0	0	0
Space heaters										
110-127 V	0	0	0	0	0	0	0	0	0	0
220-240 V	0	0	0	0	0	0	0	0	0	0
110-127 / 220-240 V	0	0	0	0	0	0	0	0	0	0
380-480 V	0	0	0	0	0	0	0	0	0	0
Service factor										
Service factor 1,15	0	0	0	0	0	0	0	0	0	0
Insulation class										
H	0	0	0	0	0	0	0	0	0	0
Variable Speed Options										
Forced ventilation kit with encoder provision (inform auxiliary motor voltage)	0	0	0	0	0	0	0	0	0	0
Forced ventilation kit without encoder provision (inform auxiliary motor voltage)	0	0	0	0	0	0	0	0	0	0
Encoder	0	0	0	0	0	0	0	0	0	0
DE side shaft grounding brush	NA	NA	NA	0*	0*	0*	0	0	0	0
NDE side shaft grounding brush	NA	NA	NA	0	0	0	0	0	0	0
Insulated DE ball bearing	NA	NA	NA	0	0	0	0	0	0	0
Insulated NDE ball bearing	NA	NA	NA	0	0	0	0	0	0	0
Insulated DE bearing hub	NA	NA	NA	0	0	0	0	0	0	0
Insulated NDE bearing hub	NA	NA	NA	0	0	0	S	S	S	S

Notes: Other optional features, on request.

Some combinations of optional features are not possible.

S - Standard 0 - Optional 0* Optional (feature available upon request)

NA - Not available