

Overview

The following overview explains the meaning of the individual positions of the Article No. The selection tables in Chapters 2 to 4 include the motors available as standard from this range.

Structure of the Article No.:	Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	Z
<u>1st to 4th positions:</u> Motor design	• Standard version	1	L	A	4											
	- Self-ventilated	1	P	Q	4											
	- Force ventilated	1	L	H	4											
	• Explosion-protected version	1	M	A	4											
	- Ex eb	1	M	G	4											
	- Ex pxb	1	M	S	4											
<u>5th to 6th positions:</u> Shaft height	• 315 mm					3	1									
	• 355 mm					3	5									
	• 400 mm					4	0									
	• 450 mm					4	5									
	• 500 mm					5	0									
	• 560 mm					5	6									
	• 630 mm					6	3									
<u>7th position:</u> Laminated core length	• Short							0								
	• Medium							2								
	• Long							4								
	• Extra long							6								
<u>8th position:</u> Pole number	• 2-pole									2						
	• 4-pole									4						
	• 6-pole									6						
	• 8-pole									8						
	• 10-pole									3						
	• 12-pole									5						
<u>9th position:</u> Rotor version	• Standard aluminum rotor										A					
	• Special aluminum rotor										B					
	• Standard copper rotor										C					
	• Special copper rotor										D					
	• Special version (CuSi,...)										E					
<u>10th position:</u> Character for operation with:	• Line supply, low voltage											A				
	• Line supply, high voltage											N				
	• LV drive converter											M				
	• MV drive converter											V				
	• Converters, others (e.g. SINAMICS PERFECT HARMONY)											W				
<u>11th position:</u> voltage code	Line supply, high voltage:															
	3.3 kV, 50 Hz													0		
	6.6 kV, 60 Hz													1		
	–													2		
	3.0 kV, 50 Hz													3		
	4.0 kV, 60 Hz													4		
	5.0 kV, 50 Hz													5		
	6.0 kV, 50 Hz													6		
	6.6 kV, 50 Hz													7		
	10 kV, 50 Hz													8		
Other voltage/frequency (additional text data)													9			
<u>12th position:</u> Type of construction	• IM B3													0		
	• IM V1 with canopy													4		
	• IM V1 without canopy													8		
	• IM B35													6		
Options: Additional order codes required.																

Introduction

SIMOTICS HV/TN Series H-compact PLUS, SIMOTICS HV M (Modular)

Article number code · SIMOTICS HV/TN Series H-compact PLUS

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Overview

The following overview explains the meaning of the individual positions of the Article No. The selection tables in Parts 2 to 4 include the motors available as standard from this range.

Structure of the Article No., shaft heights 450 mm to 630 mm		Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	Z	
1st to 4th position: Motor version	Standard version																	
		Degree of protection/cooling																
		IEC																
		NEMA																
	Open-circuit ventilated	IP23/IC01	-	1	R	A	4											
	Air/air cooling	IP55/IC611 or IC616	-	1	R	Q	4											
	Air/water cooling	IP55/IC81W or IC86W	-	1	R	N	4											
	Open-circuit ventilated	IP23/IC01	-	1	R	A	6											
	Open-circuit ventilated	IP24W/IC01	WP11	1	R	P	6											
	Air/air cooling	IP55/IC611 or IC616	TEAAC	1	R	Q	6											
	Air/water cooling	IP55/IC81W or IC86W	TEWAC	1	R	N	6											
	Ex eb version																	
	Air/air cooling	IP55/IC611 or IC616	-	1	S	J	4											
	Air/water cooling	IP55/IC81W or IC86W	-	1	S	N	4											
	Air/air cooling	IP55/IC611 or IC616	-	1	S	J	6											
	Air/water cooling	IP55/IC81W or IC86W	-	1	S	N	6											
	Ex ec version																	
	Air/air cooling	IP55/IC611 or IC616	-	1	S	G	4											
	Air/water cooling	IP55/IC81W or IC86W	-	1	S	L	4											
	Air/air cooling	IP55/IC611 or IC616	-	1	S	G	6											
	Air/water cooling	IP55/IC81W or IC86W	-	1	S	L	6											
	Ex pxb version																	
	Air/air cooling	IP55/IC611 or IC616	-	1	S	B	4											
	Air/water cooling	IP55/IC81W or IC86W	-	1	S	Q	4											
	Air/air cooling	IP55/IC611 or IC616	-	1	S	B	6											
	Air/water cooling	IP55/IC81W or IC86W	-	1	S	Q	6											
5th to 6th position: Shaft height	• 450 mm						4	5										
	• 500 mm						5	0										
	• 560 mm						5	6										
	• 630 mm						6	3										
7th position: Laminated core length	The laminated core length is coded in digits 0 to 9 (without fixed assignment)																	
8th position: Pole number	• 2-pole																	2
	• 4-pole																	4
	• 6-pole																	6
	• 8-pole																	8
	• 10-pole																	3
	• 12-pole																	5
	• 14-pole																	7
	• 16-pole																	9

Overview (continued)

Structure of the Article No.:	Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	Z	
9th position: Cooling method for:	IEC version:	Cooling method:															
	<ul style="list-style-type: none"> With shaft-mounted fan (basic version) or shaft-mounted fan for the inner and separately-driven fan for the outer cooling circuit With shaft-mounted fan for the inner and outer cooling circuits With separately-driven fan for the inner or for the inner and outer cooling circuits 	IC01/IC81W										H					
		IC616									H						
		IC611									J						
		IC86W/IC666									F						
	NEMA version (only available for 1R.6 motors with shaft height 710; other shaft heights on request)	Cooling method:															
	<ul style="list-style-type: none"> With separately-driven fan for the inner and outer cooling circuits With shaft-mounted fan With shaft-mounted fan for the inner and separately-drive fan for the outer cooling circuit With shaft-mounted fan for the inner and outer cooling circuits 	TEAAC										A					
		WP11 or TEWAC										B					
		TEAAC										B					
		TEAAC										C					
10th position: Rotor version or drive converter type	Line operation	Letter	Converter operation	Letter													
	1R.4: Standard rotor with E-Cu	E	1R.4: MV drive converter	V													
	1R.4: Standard rotor with CuSi	S	1R.4: LV drive converter	M													
	1R.6: Standard rotor with E-Cu	JKL (power-dependent)	1R.6: LV drive converter; copper rotor	P (SINAMICS G/ SINAMCIS S) Q (other converters)													
	1R.6: Standard rotor with CuSi	MN (power-dependent)	1R.6: MV drive converter; copper rotor	S (SINAMICS GM/ SINAMICS SM) T (SINAMICS PERFECT HARMONY) U (other converters)													
	1R.4 and 1R.6: Special rotor with E-Cu	X															
1R.4 and 1R.6: Special rotor with CuSi	Y																
11th position: Voltage code	1R.4: Line operation:	1R.4: Operation with MV drive converter:	1R.4: Operation with LV drive converter	1R.6: Line operation	1R.6: Converter operation												
	3.3 kV, 50 Hz	2.3 kV, 50 Hz	690 V, 50 Hz, on request	3.3 kV, 50 Hz	690 V, 50 Hz											0	
	6.6 kV, 60 Hz	2.3 kV, 60 Hz	–	6.6 kV, 60 Hz	690 V, 60 Hz											1	
	–	3.3 kV, 50 Hz	–	13.2 kV, 60 Hz	2,3 kV, 50 Hz											2	
	3.0 kV, 50 Hz	3.3 kV, 60 Hz	–	4.16 kV, 60 Hz	4,16 kV, 60 Hz											3	
	4.0 kV, 60 Hz	4.16 kV, 50 Hz	–	4.0 kV, 60 Hz	4,16 kV, 50 Hz											4	
	5.0 kV, 50 Hz	4.16 kV, 60 Hz	–	2.3 kV, 60 Hz	3,3 kV, 50 Hz											5	
	6.0 kV, 50 Hz	6.0 kV, 50 Hz	–	6.0 kV, 50 Hz	6,0 kV, 50 Hz											6	
	6.6 kV, 50 Hz	6.6 kV, 50 Hz	–	6.6 kV, 50 Hz	6,6 k V, 50 Hz											7	
	10 kV, 50 Hz	–	–	10 kV, 50 Hz	6,6 kV, 60 Hz											8	
Other voltage/frequency (additional text data)																9	
12th position: Type of construction	<ul style="list-style-type: none"> IM B3 IM V1 with canopy (for shaft height 630 mm, only in type of construction IM V10) IM V1 without canopy (for shaft height 630 mm, only in type of construction IM V10) 															0	
	Options: Additional order code required. Refer to section Options and tests in Chapter 2, Chapter 3 and Chapter 4.															4	
																8	

Introduction

SIMOTICS HV/TN Series H-compact PLUS, SIMOTICS HV M (Modular)

Article number code · SIMOTICS HV M (Modular)

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Overview

The following overview explains the meaning of the individual positions of the Article No. The selection tables in Parts 2 to 4 include the motors available as standard from this range.

Structure of the Article No., shaft heights 710 mm to 800 mm		Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16	Z										
<u>1st to 3th position:</u> Motor version, Ex-protection		Ex-protection																													
	Air/air cooling	non Ex	1	R	Q																										
	Air/air cooling	Ex ec	1	S	G																										
	Air/air cooling	Ex pxb	1	S	B																										
	Air/air cooling	Ex eb	1	S	J																										
	Basic design, open-circuit ventilated	non Ex	1	R	A																										
	Weather protected design, open-circuit ventilated	non ex	1	R	P																										
	Air/water cooling	non Ex	1	R	N																										
	Air/water cooling	Ex ec	1	S	L																										
	Air/water cooling	Ex pxb	1	S	Q																										
	Air/water cooling	Ex eb	1	S	N																										
<u>4th position:</u> Motor series	SIMOTIC HV M (modular)					7																									
<u>5th to 6th position:</u> Shaft height	• 710 mm						7	1																							
	• 800 mm						8	0																							
<u>7th position:</u> Laminated core length	The laminated core length is coded in digits 0 to 9 (without fixed assignment)																														
<u>8th position:</u> Pole number	<ul style="list-style-type: none"> • 2-pole • 4-pole • 6-pole • 8-pole • 10-pole • 12-pole • 14-pole • 16-pole • 18-pole • Other pole numbers 											Additional order code required	2	4	6	8	3	5	7	0	1	9									
<u>9th position:</u> Cooling method for:	Cooling method:																														
	• Open inner cooling air circuit	IC01																				F									
	• Weather-protected design, open circuit	WP11																				H									
	• Air/air cooling	TEAAC – IC611																				J									
	• Air/air cooling with forced ventilation for outer air circuit	TEAAC – IC616																				K									
	• Air/air cooling with forced ventilation for inner air circuit	TEAAC – IC661																				L									
	• Air/air cooling with forced ventilation for inner and outer air circuit	TEAAC – IC666																				M									
	• Air/water cooling	TEWAC – IC81W																				N									
	• Air/water cooling with forced ventilation	TEWAC – IC86W																				P									

Overview (continued)

Structure of the Article No.:	Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16	Z		
<u>10th position:</u> Motor for line operation or for converter operation	For line operation with												A									
	• High voltage motor												B									
	• Low voltage motor																					
	For converter operation with												C									
	• SINAMICS G150												D									
	• SINAMICS S120												E									
	• SINAMICS S150												F									
	• SINAMICS G180												R									
	• SINAMICS GM150												S									
	• SINAMICS SM150												T									
	• SINAMICS GH180												U									
	• SINAMICS GH150												Z									
	• Other converters (additional text data)																					
<u>11th position:</u> Voltage code	Line operation	Operation with MV drive converter										Line/converter operation										
	3.3 kV, 50 Hz	7.2 kV, 50 Hz										690 V, 60 Hz										
	6.6 kV, 60 Hz	11 kV, 50 Hz										690 V, 50 Hz										
	13.2 kV, 60 Hz	2.3 kV, 50 Hz										–										
	4.16 kV, 60 Hz	4.16 kV, 60 Hz										–										
	4 kV, 60 Hz	4.16 kV, 50 Hz										400 V										
	2.3 kV, 60 Hz	3.3 kV, 50 Hz										500V										
	6.0 kV, 50 Hz	6 kV, 50 Hz										–										
	6.6 kV, 50 Hz	6.6 kV, 50 Hz										660 V										
	10 kV, 50 Hz	6.6 kV, 60 Hz										–										
	Other voltages/frequency (additional text data)											9										
<u>12th position:</u> Type of construction	• IM B3 (IM 1001)											0										
	• IM V1, without protective hood (IM 3011)											8										
	• Other mounting types (additional text data)											9										
<u>13th position:</u> Temperature class (for explosion protection)	• Without temperature class											0										
	• Temperature class T2											2										
	• Temperature class T3											3										
	• Temperature class T4											4										
<u>14th position:</u> Rotor version	• Standard rotor – E-Cu											C										
	• Special rotor – E-Cu											D										
	• Standard rotor – CuSi											E										
	• Special rotor – CuSi											F										
	• Special rotor – with other material type											G										
<u>15th position:</u> Housing and bearing version	• Steel fabricated housing / anti-friction bearings											G										
	• Steel fabricated housing / sleeve bearing											J										
<u>16th position:</u> Category	• Standard series											0										
<u>Z position:</u>	Options: Additional order code required. Refer to section Options and tests in Chapter 2, Chapter 3 and Chapter 4.											Z										

Introduction

SIMOTICS HV/TN Series H-compact PLUS, SIMOTICS HV M (Modular)

Performance features

Overview

Performance features of the H-compact PLUS and SIMOTICS HV M series

The H-compact PLUS and SIMOTICS HV M motors have a modular design (main motor housing with different possible cooling top enclosures).

This means that the following cooling methods can be implemented:

- Air/water cooling
- Air/air cooling
- Open-circuit cooling

The new 1R.6/1S.6 and 1R.7/1S.7 series are the second generation of the H-compact PLUS motors. They offer higher power ratings (for two-pole motors), permit a higher external moment of inertia, sport an innovative design as well as an extended range of options.

Overview table of the H-compact PLUS series

Series	Version	Voltages	Powers	Degree of protection	Cooling method	Type of protection	Type of construction
1RA4	IEC	690 V	1370 ... 2800 kW ²⁾	IP23	IC01	No	IM B3, IM V1, (shaft height 630 only V10)
1RA6		3.3 ... 11 kV ¹⁾	1370 ... 11700 kW ³⁾				
1RN4	IEC	690 V	1370 ... 2800 kW ²⁾	IP55	IC81W	No	
1RN6		3.3 ... 11 kV ¹⁾	1370 ... 11700 kW ³⁾				
1RQ4	IEC	690 V	1090 ... 2400 kW ²⁾	IP55	IC611/IC616/IC666	No	
1RQ6		3.3 ... 11 kV ¹⁾	1090 ... 8700 kW ³⁾				
1SG4	IEC	690 V	1090 ... 2400 kW ²⁾	IP55	IC611/IC616/IC666	Ex ec, Ex tc	
1SG6		3.3 ... 11 kV ¹⁾	1090 ... 8700 kW ³⁾				
1SL4	IEC	690 V	1370 ... 2800 kW ²⁾	IP55	IC81W	Ex ec, Ex tc	
1SL6		3.3 ... 11 kV ¹⁾	1370 ... 11700 kW ³⁾				
1SB4	IEC	690 V	1090 ... 2400 kW ²⁾	IP55	IC611/IC616/IC666	Ex pxb	
1SB6		3.3 ... 11 kV ¹⁾	1090 ... 8700 kW ³⁾				
1SQ4	IEC	690 V	1370 ... 2800 kW ²⁾	IP55	IC81W	Ex pxb	
1SQ6		3.3 ... 11 kV ¹⁾	1370 ... 11700 kW ³⁾				
1SJ4, 1SJ6	IEC	On request	On request	IP55	IC611/IC616/IC666	Ex eb	
1SN4, 1SN6					IC81W		
1RP6	IEC	690 V	1370 ... 2800 kW ²⁾	IP24W	IC01	No	IM B3, IM V1
		3.3 ... 11 kV	1370 ... 11700 kW ³⁾				
1RN6	NEMA	3.3 ... 13.8 kV	11000 ... 18000 hp ⁴⁾	WP11	Open	No	
		3.3 ... 13.8 kV	11000 ... 18000 hp ⁴⁾				
1RQ6	NEMA	3.3 ... 13.8 kV	11000 ... 18000 hp ⁴⁾	TEAAC	Air/air	No	
1SG6	NEMA	3.3 ... 13.8 kV	11000 ... 18000 hp ⁴⁾	TEAAC	Air/air	Class 1, Div 2	
1SL6	NEMA	3.3 ... 13.8 kV	11000 ... 18000 hp ⁴⁾	TEWAC	Air/water	Class 1, Div 2	

Overview table of the SIMOTICS HV M series, shaft heights 710 and 800 mm

Series	Version	Voltages	Powers	Degree of protection	Cooling method	Type of protection	Type of construction
1RN7, 1RA7, 1RP7	IEC	3.3 ... 11 kV ¹⁾	9000 ... 12500 kW ³⁾	IP55/IP24W	IC81W/IC86W/IC01	No	IM B3, IM V1
1RQ7	IEC	3.3 ... 11 kV ¹⁾	7000 ... 9500 kW ³⁾	IP55	IC611/IC616/IC666	No	
1SG7	IEC	3.3 ... 11 kV ¹⁾	7000 ... 9500 kW ³⁾	IP55	IC611/IC616/IC666	Ex ec, Ex tc	
1SL7	IEC	3.3 ... 11 kV ¹⁾	9000 ... 12500 kW ³⁾	IP55	IC81W/IC86W	Ex ec, Ex tc	

Note: Detailed data for shaft height 800 mm on request.

¹⁾ 13.8 kV on request.

²⁾ Power rating values apply for 690 V, 50 Hz, 4-pole version, insulation system thermal class 155 (F), utilized to 155 (F).

³⁾ Power rating values apply for 6 kV, 50 Hz, 4-pole version, insulation system thermal class 155 (F), utilized to 130 (B).

⁴⁾ Power rating values apply for 6.6 kV, 60 Hz, 4-pole version, insulation system thermal class 155 (F), utilized to 130 (B).