

### Characteristics with BSH 0551T servo motors

Type of servo motor		BSH 0551T		
Associated with Lexium 05 servo drive		LXM 05●D10F1	LXM 05●D10M2	LXM 05●D10M3X
Line supply voltage	V	115 single phase	230 single phase	230 3-phase
Switching frequency	kHz	8		
Torque	Continuous stall	$M_0$ Nm	0.5	
	Peak stall	$M_{max}$ Nm	1.4	
Nominal operating point	Nominal torque	Nm	0.46	0.43
	Nominal speed	rpm	3000	6000
Maximum current	A rms	6.2		

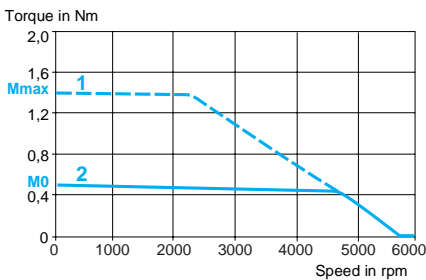
### Servo motor characteristics

Maximum mechanical speed	rpm	9000		
Constants (at 120°C)	Torque	Nm/A rms	0.36	
	Back emf	$V_{rms}/krpm$	22	
Rotor	Number of poles	6		
	Inertia	Without brake	$J_m$ kgcm <sup>2</sup>	0.059
		With brake	$J_m$ kgcm <sup>2</sup>	0.1113
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	12.2	
	Inductance (phase/phase)	mH	20.8	
	Electrical time constant	ms	1.705	
Holding brake (depending on model)		See page 43748/2		

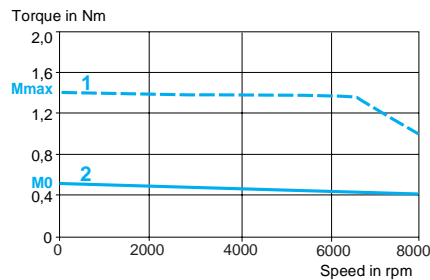
### Speed/torque curves

#### BSH 0551T servo motors

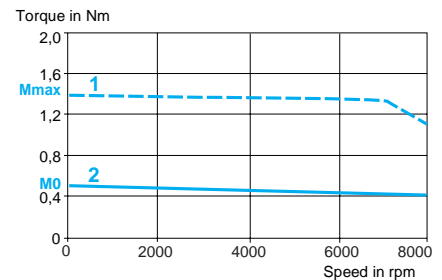
With LXM 05●D10F1 servo drive  
115 V single phase



With LXM 05●D10M2 servo drive  
230 V single phase



With LXM 05●D10M3X servo drive  
230 V 3-phase



- 1 Peak torque
- 2 Continuous torque

### Characteristics of BSH 0552M/0552P servo motors

Type of servo motor		BSH 0552M		BSH 0552P		
Associated with Lexium 05 servo drive		LXM 05 ●D10M2	LXM 05 ●D10M3X	LXM 05 ●D10M2	LXM 05 ●D10M3X	LXM 05 ●D14N4
Line supply voltage	V	230 single phase	230 3-phase	230 single phase	230 3-phase	400/480 3-phase
Switching frequency	kHz	4		8		
Torque	Continuous stall $M_0$	Nm		0.9		
	Peak stall $M_{max}$	Nm		2.3		
Nominal operating point	Nominal torque	Nm		0.85		
	Nominal speed	rpm		1500		
Maximum current	A rms	2.9		5.9		

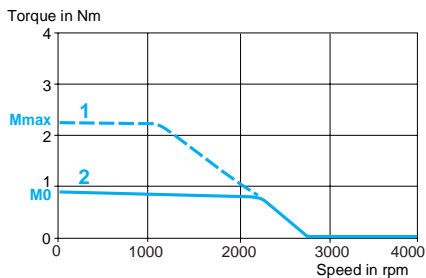
### Servo motor characteristics

Maximum mechanical speed	rpm	9000				
Constants (at 120°C)	Torque	Nm/A rms		1.33		
	Back emf	$V_{rms}/krpm$		74		
Rotor	Number of poles	6				
	Inertia	Without brake $J_m$	kgcm <sup>2</sup>			
		With brake $J_m$	0.096			
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$		60.2		
	Inductance (phase/phase)	mH		122		
	Electrical time constant	ms		1.24		
	17.4	35.3				
Holding brake (depending on model)	See page 43748/2					

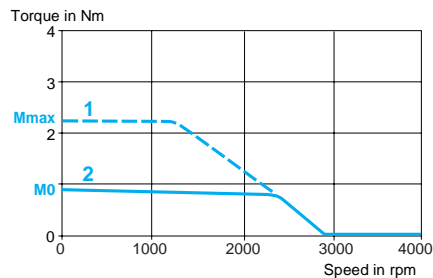
### Speed/torque curves

#### BSH 0552M servo motor

With LXM 05●D10M2 servo drive  
230 V single phase

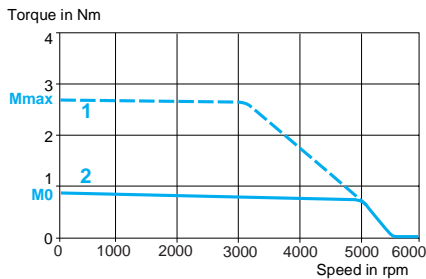


With LXM 05●D10M3X servo drive  
230 V 3-phase

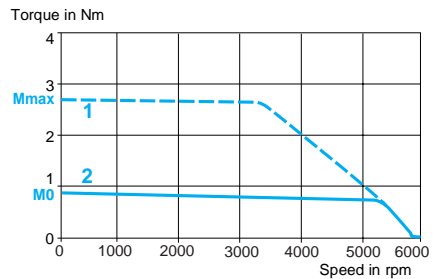


#### BSH 0552P servo motor

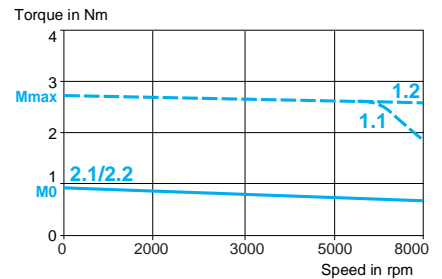
With LXM 05●D10M2 servo drive  
230 V single phase



With LXM 05●D10M3X servo drive  
230 V 3-phase



With LXM 05●D14N4 servo drive  
400/480 V 3-phase



1 Peak torque  
2 Continuous torque

1.1 Peak torque at 400 V 3-phase  
2.1 Continuous torque at 400 V 3-phase

1.2 Peak torque at 480 V 3-phase  
2.2 Continuous torque at 480 V 3-phase

### Characteristics of BSH 0552T servo motors

Type of servo motor		BSH 0552T			
Associated with Lexium 05 servo drive		LXM 05 ●D10F1	LXM 05 ●D17F1	LXM 05 ●D10M2	LXM 05 ●D10M3X
Line supply voltage	V	115 single phase	115 single phase	230 single phase	230 3-phase
Switching frequency	kHz	8			
Torque	Continuous stall $M_0$	Nm	0.9		
	Peak stall $M_{max}$	Nm	1.77	2.7	1.77
Nominal operating point	Nominal torque	Nm	0.8	0.72	
	Nominal speed	rpm	3000	6000	
Maximum current	A rms	10.3			

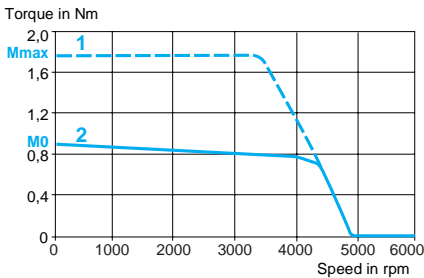
### Servo motor characteristics

Maximum mechanical speed	rpm	9000		
Constants (at 120°C)	Torque	Nm/A rms	0.36	
	Back emf	V <sub>rms</sub> /krpm	22	
Rotor	Number of poles		6	
	Inertia	Without brake $J_m$	kgcm <sup>2</sup>	0.14
		With brake $J_m$	kgcm <sup>2</sup>	0.1613
Stator (at 20°C)	Resistance (phase/phase)	Ω	5.2	
	Inductance (phase/phase)	mH	10.6	
	Electrical time constant	ms	1.24	
Holding brake (depending on model)		See page 43748/2		

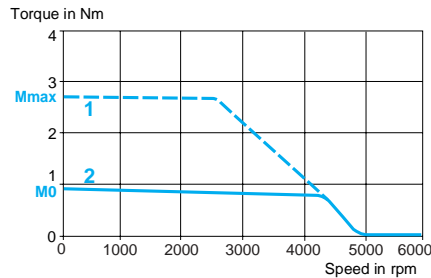
### Speed/torque curves

#### BSH 0552T servo motor

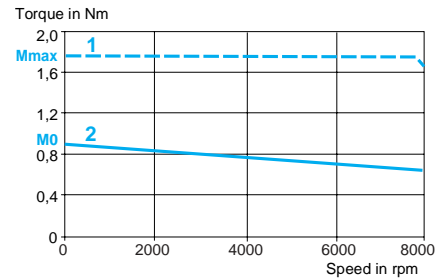
With LXM 05●D10F1 servo drive  
115 V single phase



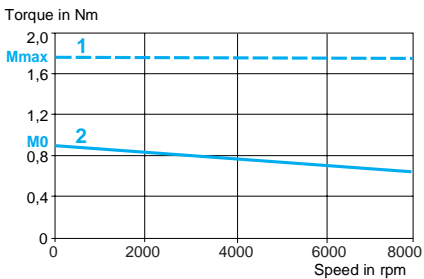
With LXM 05●D17F1 servo drive  
115 V single phase



With LXM 05●D10M2 servo drive  
230 V single phase



With LXM 05●D10M3X servo drive  
230 V 3-phase



- 1 Peak torque
- 2 Continuous torque

### Characteristics of BSH 0553M servo motors

Type of servo motor		BSH 0553M	
Associated with Lexium 05 servo drive		LXM 05 ●D10M2	LXM 05 ●D10M3X
Line supply voltage	V	230 single phase	230 3-phase
Switching frequency	kHz	4	
Torque	Continuous stall $M_0$	Nm	1.3
	Peak stall $M_{max}$	Nm	4.2
Nominal operating point	Nominal torque	Nm	1.2
	Nominal speed	rpm	1500
Maximum current	A rms	4.3	

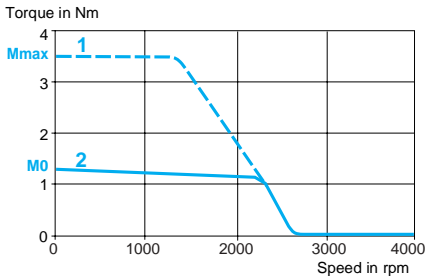
### Servo motor characteristics

Maximum mechanical speed	rpm	9000		
Constants (at 120°C)	Torque	Nm/A rms	1.33	
	Back emf	$V_{rms}/krpm$	79	
Rotor	Number of poles	6		
	Inertia	Without brake $J_m$	kgcm <sup>2</sup>	0.134
		With brake $J_m$	kgcm <sup>2</sup>	0.2113
Stator (at 20°C)	Resistance (phase/phase)	Ω	38.4	
	Inductance (phase/phase)	mH	92.2	
	Electrical time constant	ms	1.5	
Holding brake (depending on model)		See page 43748/2		

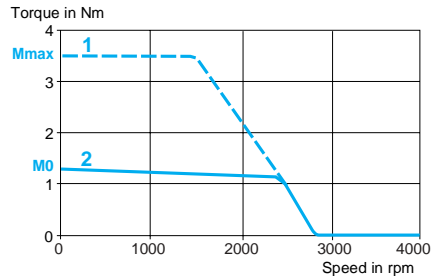
### Speed/torque curves

#### BSH 0553M servo motors

With LXM 05●D10M2 servo drive  
230 V single phase



With LXM 05●D10M3X servo drive  
230 V 3-phase



- 1 Peak torque
- 2 Continuous torque

### Characteristics of BSH 0553P/0553T servo motors

Type of servo motor		BSH 0553P			BSH 0553T		
Associated with Lexium 05 servo drive		LXM 05 ●D10M2	LXM 05 ●D10M3X	LXM 05 ●D14N4	LXM 05 ●D17F1	LXM 05 ●D17M2	LXM 05 ●D17M3X
Line supply voltage	V	230 single phase	230 3-phase	400/480 3-phase	115 single phase	230 single phase	230 3-phase
Switching frequency	kHz	8					
Torque	Continuous stall $M_0$	Nm	1.3				
	Peak stall $M_{max}$	Nm	3.18	3.87	3.31		
Nominal operating point	Nominal torque	Nm	1	0.9	11	0.9	
	Nominal speed	rpm	4000	6000	3000	6000	
Maximum current	A rms	8.7			15.2		

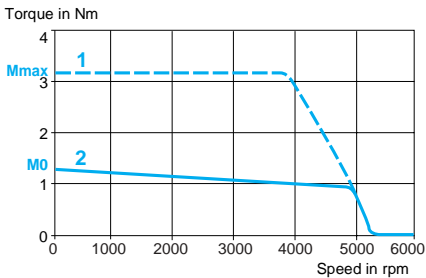
### Servo motor characteristics

Maximum mechanical speed	rpm	9000					
Constants (at 120°C)	Torque	Nm/A rms	0.7			0.39	
	Back emf	$V_{rms}/krpm$	41			22	
Rotor	Number of poles		6				
	Inertia	Without brake $J_m$	kgcm <sup>2</sup>	0.134			
		With brake $J_m$	kgcm <sup>2</sup>	0.2113			
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	10.4			3.1	
	Inductance (phase/phase)	mH	25			7.4	
	Electrical time constant	ms	1.5				
	Holding brake (depending on model)		See page 43748/2				

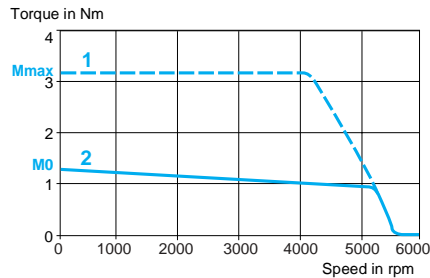
### Speed/torque curves

#### BSH 0553P servo motors

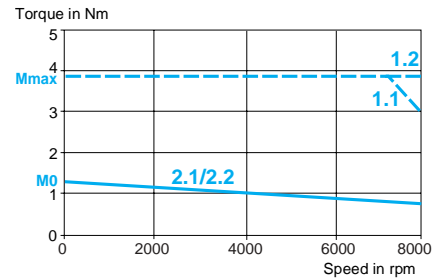
With LXM 05●D10M2 servo drive  
230 V single phase



With LXM 05●D10M3X servo drive  
230 V 3-phase

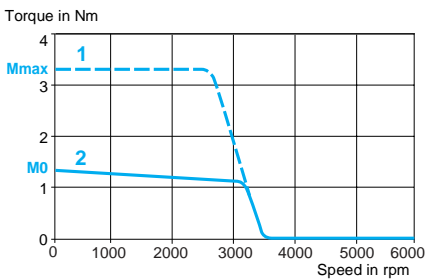


With LXM 05●D14N4 servo drive  
400/480 V 3-phase

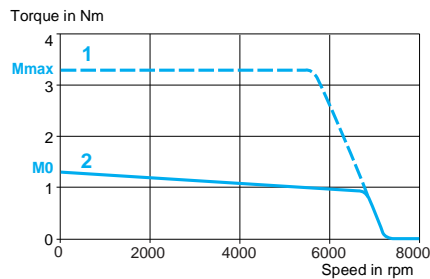


#### BSH 0553T servo motor

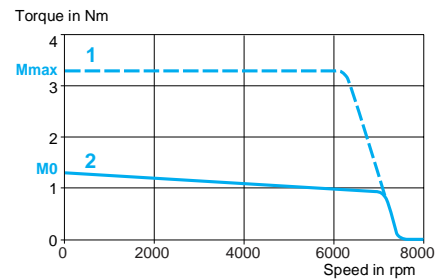
With LXM 05●D17F1 servo drive  
115 V single phase



With LXM 05●D17M2 servo drive  
230 V single phase



With LXM 05●D17M3X servo drive  
230 V 3-phase



1 Peak torque  
2 Continuous torque

1.1 Peak torque at 400 V 3-phase  
2.1 Continuous torque at 400 V 3-phase

1.2 Peak torque at 480 V 3-phase  
2.2 Continuous torque at 480 V 3-phase

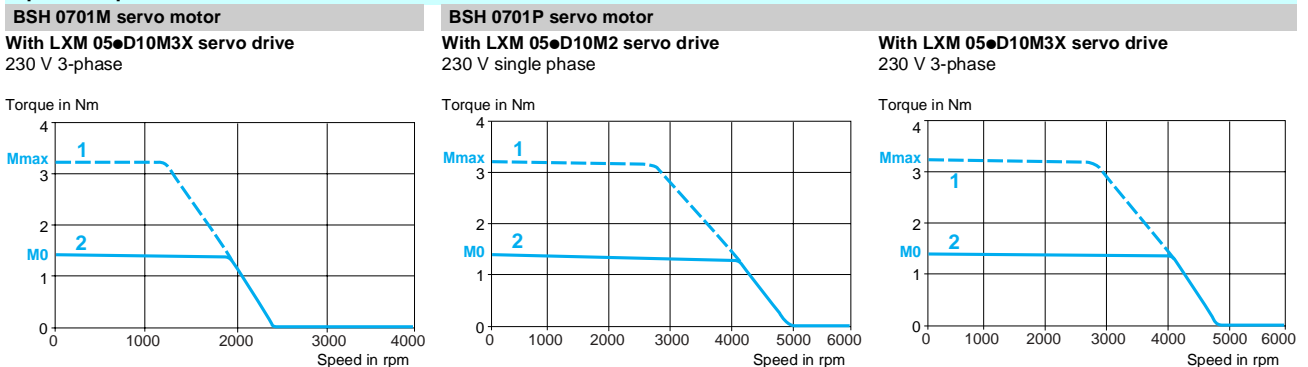
### Characteristics of BSH 0701M/0701P servo motors

Type of servo motor	BSH 0701M		BSH 0701P	
Associated with Lexium 05 servo drive	LXM 05 ●D10M3X		LXM 05 ●D10M2	LXM 05 ●D10M3X
Line supply voltage	V	230 3-phase	230 single phase	230 3-phase
Switching frequency	kHz	4		
Torque	Continuous stall $M_0$	Nm	1.4	
	Peak stall $M_{max}$	Nm	3.2	
Nominal operating point	Nominal torque	Nm	1.36	1.3
	Nominal speed	rpm	1500	3000
Maximum current	A rms	2.8	5.3	

### Servo motor characteristics

Maximum mechanical speed	rpm	8000		
Constants (at 120°C)	Torque	Nm/A rms	1.6	0.8
	Back emf	$V_{rms}/krpm$	91	46
Rotor	Number of poles		6	
	Inertia	Without brake $J_m$	kgcm <sup>2</sup>	0.25
		With brake $J_m$	kgcm <sup>2</sup>	0.322
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	41.6	10.4
	Inductance (phase/phase)	mH	173.2	38.8
	Electrical time constant	ms	4.16	3.73
Holding brake (depending on model)		See page 43748/2		

### Speed/torque curves



- 1 Peak torque
- 2 Continuous torque

### Characteristics of BSH 0701T servo motors

Type of servo motor		BSH 0701T				
Associated with Lexium 05 servo drive		LXM 05 ●D10F1	LXM 05 ●D17M2	LXM 05 ●D10M3X	LXM 05 ●D17M3X	
Line supply voltage	V	115 single phase	230 single phase	230 3-phase	230 3-phase	
Switching frequency	kHz	8				
Torque	Continuous stall $M_0$	Nm	1.4			
	Peak stall $M_{max}$	Nm	2.42	3.19	2.41	3.19
Nominal operating point	Nominal torque	Nm	1.43	1.32	1.2	1.32
	Nominal speed	rpm	2500	5000	6000	5000
Maximum current	A rms	9.9				

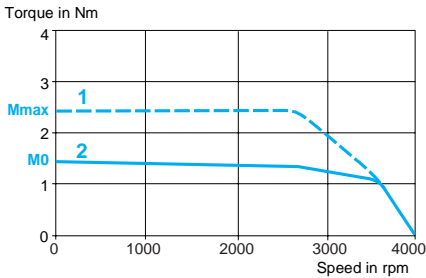
### Servo motor characteristics

Maximum mechanical speed	rpm	8000		
Constants (at 120°C)	Torque	Nm/A rms	0.46	
	Back emf	V <sub>rms</sub> /krpm	27	
Rotor	Number of poles	6		
	Inertia	Without brake $J_m$	kgcm <sup>2</sup>	0.25
		With brake $J_m$	kgcm <sup>2</sup>	0.322
Stator (at 20°C)	Resistance (phase/phase)	Ω	3.3	
	Inductance (phase/phase)	mH	12.6	
	Electrical time constant	ms	3.81	
Holding brake (depending on model)		See page 43748/2		

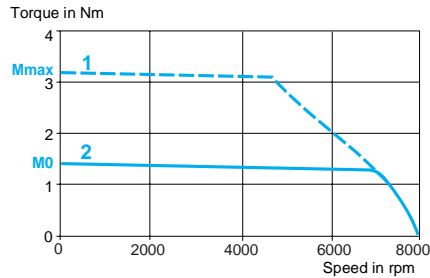
### Speed/torque curves

#### BSH 0701T servo motor

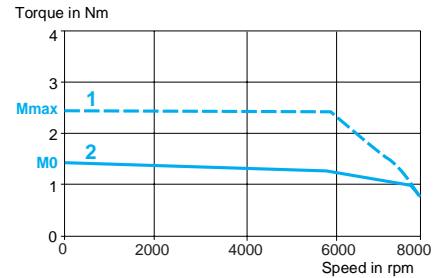
With LXM 05●D10F1 servo drive  
115 V single phase



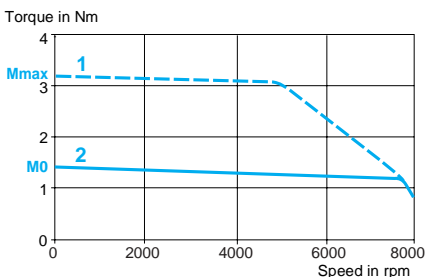
With LXM 05●D17M2 servo drive  
230 V single phase



With LXM 05●D10M3X servo drive  
230 V 3-phase



With LXM 05●D17M3X servo drive  
230 V 3-phase



- 1 Peak torque
- 2 Continuous torque

### Characteristics of BSH 0702M servo motors

Type of servo motor		BSH 0702M	
Associated with Lexium 05 servo drive		LXM 05●D10M2	LXM 05●D10M3X
Line supply voltage		V	230 single phase / 230 3-phase
Switching frequency		kHz	4
Torque	Continuous stall	$M_0$ Nm	2.1
	Peak stall	$M_{max}$ Nm	6.8
Nominal operating point	Nominal torque	Nm	2.12
	Nominal speed	rpm	1500
Maximum current		A rms	5.9

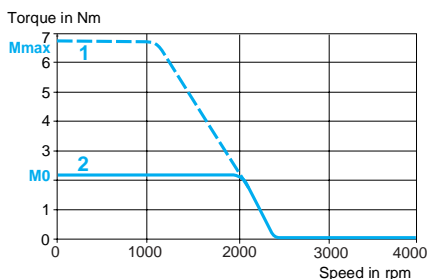
### Servo motor characteristics

Maximum mechanical speed		rpm	8000
Constants (at 120°C)	Torque	Nm/A rms	1.46
	Back emf	$V_{rms}/krpm$	93
Rotor	Number of poles		6
	Inertia	Without brake	$J_m$ kgcm <sup>2</sup>
		With brake	$J_m$ kgcm <sup>2</sup>
Stator (at 20°C)	Resistance (phase/phase)		$\Omega$ 17.3
	Inductance (phase/phase)		mH 84.4
	Electrical time constant		ms 4.88
Holding brake (depending on model)			See page 43748/2

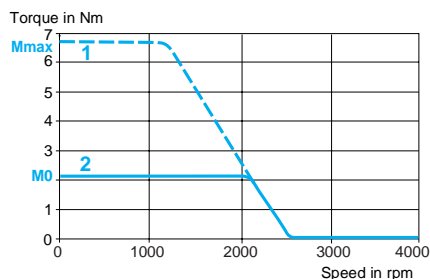
### Speed/torque curves

#### BSH 0702M servo motor

With LXM 05●D10M2 servo drive  
230 V single phase



With LXM 05●D10M3X servo drive  
230 V 3-phase



- 1 Peak torque
- 2 Continuous torque



### Characteristics of BSH 0702P servo motors

Type of servo motor		BSH 0702P				
Associated with Lexium 05 servo drive		LXM 05 ●D10M2	LXM 05 ●D17M2	LXM 05 ●D10M3X	LXM 05 ●D17M3X	LXM 05 ●D14N4
Line supply voltage	V	230 single phase	230 single phase	230 3-phase	230 3-phase	400/480 3-phase
Switching frequency	kHz	4				
Torque	Continuous stall	$M_0$	Nm	2.2		
	Peak stall	$M_{max}$	Nm	5.37	7.55	5.37 7.55
Nominal operating point	Nominal torque	Nm	1.9			1.6
	Nominal speed	rpm	3000			6000
Maximum current	A rms	9.8				

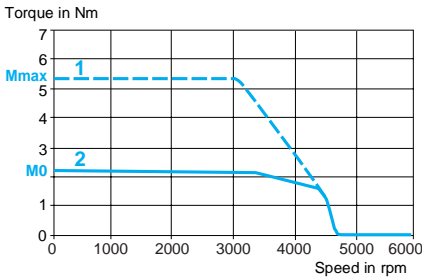
### Servo motor characteristics

Maximum mechanical speed	rpm	8000					
Constants (at 120°C)	Torque	Nm/A rms	0.77				
	Back emf	$V_{rms}/krpm$	48				
Rotor	Number of poles		6				
	Inertia	Without brake	$J_m$	kgcm <sup>2</sup>			0.41
		With brake	$J_m$	kgcm <sup>2</sup>			0.482
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	4.2				
	Inductance (phase/phase)	mH	21.3				
	Electrical time constant	ms	5.07				
Holding brake (depending on model)		See page 43748/2					

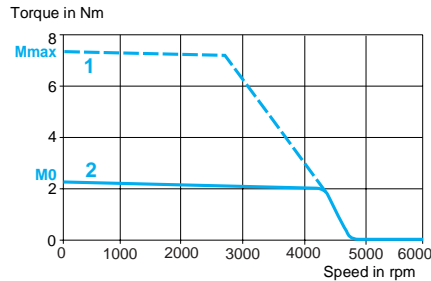
### Speed/torque curves

#### BSH 0702P servo motor

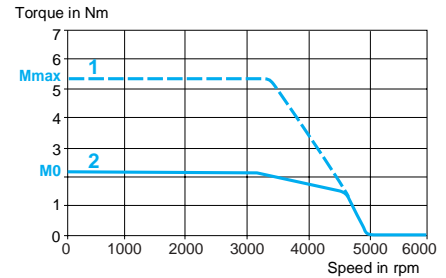
With LXM 05●D10M2 servo drive  
230 V single phase



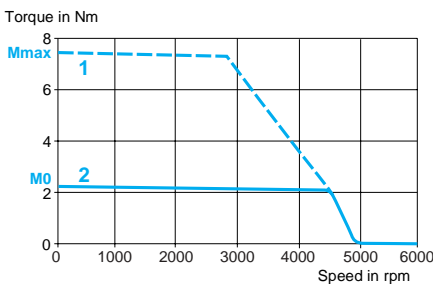
With LXM 05●D17M2 servo drive  
230 V single phase



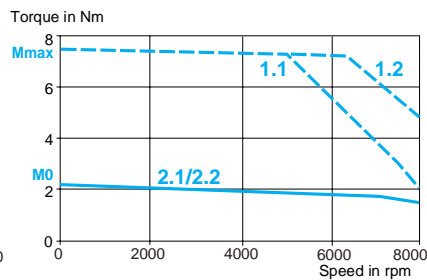
With LXM 05●D10M3X servo drive  
230 V 3-phase



With LXM 05●D17M3X servo drive  
230 V 3-phase



With LXM 05●D14N4 servo drive  
400/480 V 3-phase



- 1 Peak torque
- 2 Continuous torque

- 1.1 Peak torque at 400 V 3-phase
- 2.1 Continuous torque at 400 V 3-phase

- 1.2 Peak torque at 480 V 3-phase
- 2.2 Continuous torque at 480 V 3-phase

### Characteristics of BSH 0702T servo motors

Type of servo motor		BSH 0702T			
Associated with Lexium 05 servo drive		LXM 05 ●D17F1	LXM 05 ●D17M2	LXM 05 ●D28M2	LXM 05 ●D42M3X
Line supply voltage	V	115 single phase	230 single phase	230 single phase	230 3-phase
Switching frequency	kHz	8			
Torque	Continuous stall $M_0$	Nm		2.12	
	Peak stall $M_{max}$	Nm		4.14	
Nominal operating point	Nominal torque	Nm	1.9	1.7	1.76
	Nominal speed	rpm	2500	6000	4500
Maximum current	A rms	20.6			

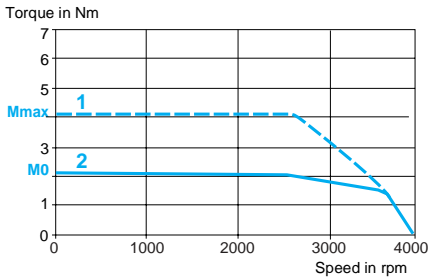
### Servo motor characteristics

Maximum mechanical speed	rpm	8000		
Constants (at 120°C)	Torque	Nm/A rms	0.42	
	Back emf	$V_{rms}/krpm$	28	
Rotor	Number of poles	6		
	Inertia	Without brake $J_m$	kgcm <sup>2</sup>	0.41
		With brake $J_m$	kgcm <sup>2</sup>	0.482
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	1.5	
	Inductance (phase/phase)	mH	6.6	
	Electrical time constant	ms	4.4	
Holding brake (depending on model)		See page 43748/2		

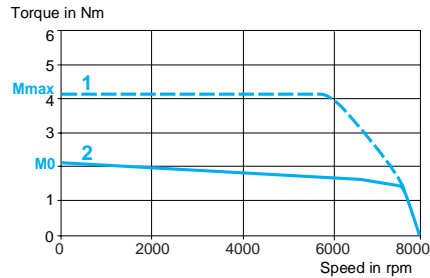
### Speed/torque curves

#### BSH 0702T servo motor

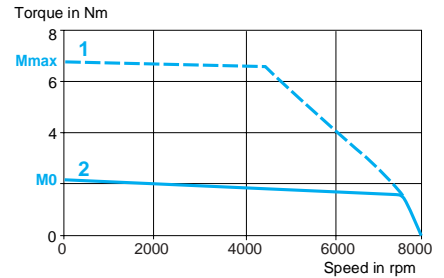
With LXM 05●D17F1 servo drive  
115 V single phase



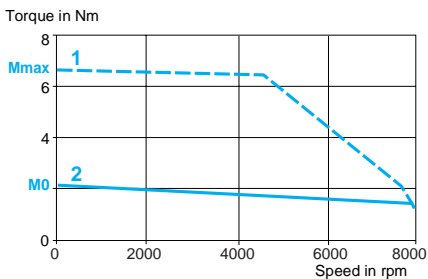
With LXM 05●D17M2 servo drive  
230 V single phase



With LXM 05●D28M2 servo drive  
230 V single phase



With LXM 05●D42M3X servo drive 230 V 3-phase



- 1 Peak torque
- 2 Continuous torque

### Characteristics of BSH 0703M servo motors

Type of servo motor		BSH 0703M		
Associated with Lexium 05 servo drive		LXM 05●D10M2	LXM 05●D10M3X	LXM 05●D14N4
Line supply voltage	V	230 single phase	230 3-phase	400/480 3-phase
Switching frequency	kHz	4		
Torque	Continuous stall	$M_0$	Nm	2.8
	Peak stall	$M_{max}$	Nm	10
Nominal operating point	Nominal torque	Nm	2.7	2.5
	Nominal speed	rpm	1500	3000
Maximum current	A rms	7.3		

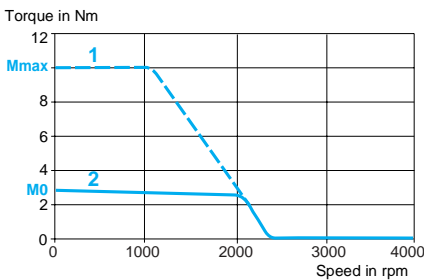
### Servo motor characteristics

Maximum mechanical speed	rpm	8000		
Constants (at 120°C)	Torque	Nm/A rms	1.48	
	Back emf	$V_{rms}/krpm$	96	
Rotor	Number of poles	6		
	Inertia	Without brake	$J_m$	kgcm <sup>2</sup>
		With brake	$J_m$	kgcm <sup>2</sup>
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	10.7	
	Inductance (phase/phase)	mH	48.1	
	Electrical time constant	ms	4.5	
	Holding brake (depending on model)	See page 43748/2		

### Speed/torque curves

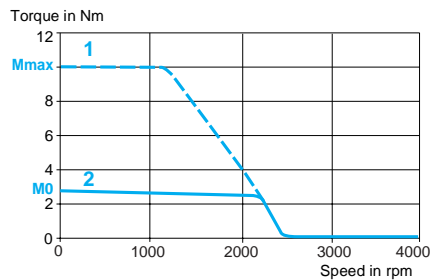
#### BSH 0703M servo motor

With LXM 05●D10M2 servo drive  
230 V single phase



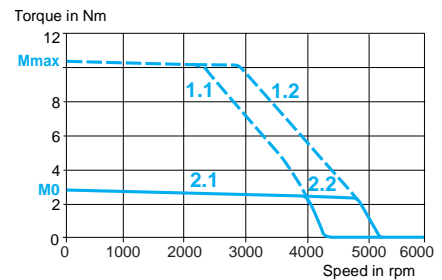
- 1 Peak torque
- 2 Continuous torque

With LXM 05●D10M3X servo drive  
230 V 3-phase



- 1.1 Peak torque at 400 V 3-phase
- 2.1 Continuous torque at 400 V 3-phase

With LXM 05●D14N4 servo drive  
400/480 V 3-phase



- 1.1 Peak torque at 400 V 3-phase
- 1.2 Peak torque at 480 V 3-phase
- 2.1 Continuous torque at 400 V 3-phase
- 2.2 Continuous torque at 480 V 3-phase

### Characteristics of BSH 0703P servo motors

Type of servo motor		BSH 0703P			
Associated with Lexium 05 servo drive		LXM 05 ●D17M2	LXM 05 ●D28M2	LXM 05 ●D17M3X	LXM 05 ●D22N4
Line supply voltage	V	230 single phase	230 single phase	230 3-phase	400/480 3-phase
Switching frequency	kHz	8			
Torque	Continuous stall	$M_0$ Nm			
	Peak stall	$M_{max}$ Nm			
Nominal operating point	Nominal torque	Nm	2.8	2.3	2.8
	Nominal speed	rpm	3000		6000
Maximum current	A rms	15.2			

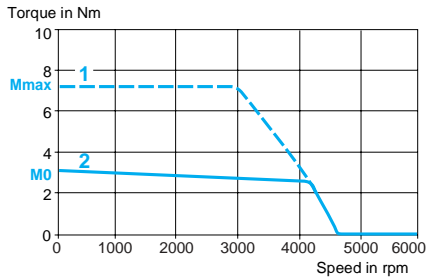
### Servo motor characteristics

Maximum mechanical speed	rpm	8000	
Constants (at 120°C)	Torque	Nm/A rms	
	Back emf	$V_{rms}/krpm$	
Rotor	Number of poles	6	
	Inertia	Without brake $J_m$	kgcm <sup>2</sup>
		With brake $J_m$	kgcm <sup>2</sup>
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	
	Inductance (phase/phase)	mH	
	Electrical time constant	ms	
	Holding brake (depending on model)		See page 43748/2

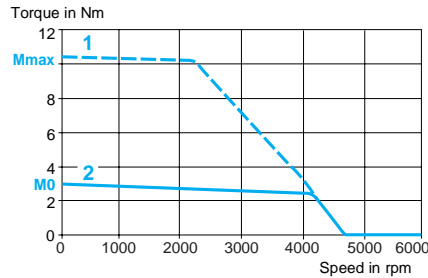
### Speed/torque curves

#### BSH 0703P servo motor

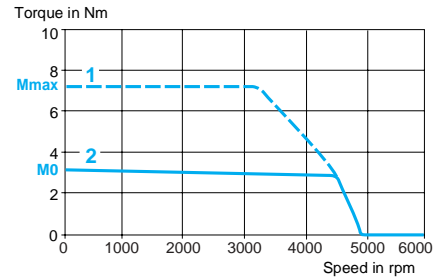
With LXM 05●D17M2 servo drive  
230 V single phase



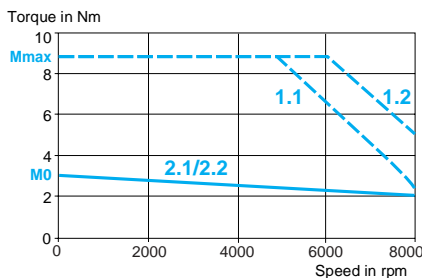
With LXM 05●D28M2 servo drive  
230 V single phase



With LXM 05●D17M3X servo drive  
230 V 3-phase



With LXM 05●D22N4 servo drive  
400/480 V 3-phase



- 1 Peak torque
- 2 Continuous torque

- 1.1 Peak torque at 400 V 3-phase
- 2.1 Continuous torque at 400 V 3-phase

- 1.2 Peak torque at 480 V 3-phase
- 2.2 Continuous torque at 480 V 3-phase

### Characteristics of BSH 0703T servo motors

Type of servo motor		BSH 0703T		
Associated with Lexium 05 servo drive		LXM 05●D28F1	LXM 05●D28M2	LXM 05●D42M3X
Line supply voltage	V	115 single phase	230 single phase	230 3-phase
Switching frequency	kHz	8		
Torque	Continuous stall	$M_0$ Nm	2.8	
	Peak stall	$M_{max}$ Nm	7.38	
Nominal operating point	Nominal torque	Nm	2.55	2.1
	Nominal speed	rpm	2500	6000
Maximum current	A rms	30.9		

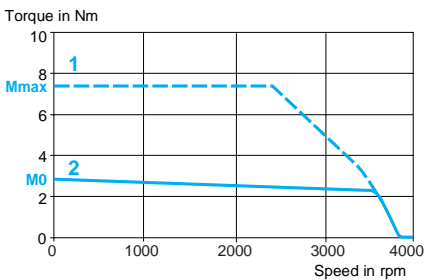
### Servo motor characteristics

Maximum mechanical speed	rpm	8000		
Constants (at 120°C)	Torque	Nm/A rms	0.42	
	Back emf	$V_{rms}/krpm$	29	
Rotor	Number of poles	6		
	Inertia	Without brake	$J_m$ kgcm <sup>2</sup>	0.58
		With brake	$J_m$ kgcm <sup>2</sup>	0.81
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	1	
	Inductance (phase/phase)	mH	4.4	
	Electrical time constant	ms	4.4	
Holding brake (depending on model)		See page 43748/2		

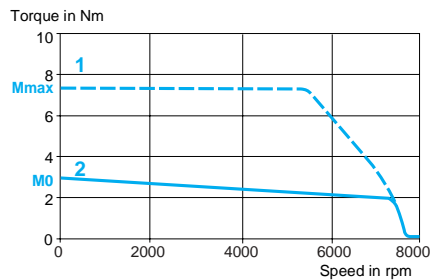
### Speed/torque curves

#### BSH 0703T servo motor

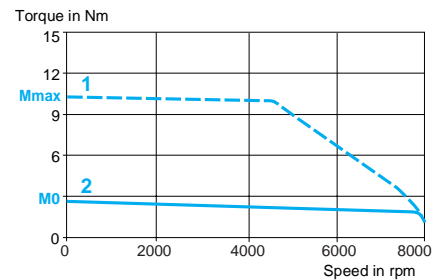
With LXM 05●D28F1 servo drive  
115 V single phase



With LXM 05●D28M2 servo drive  
230 V single phase



With LXM 05●D42M3X servo drive  
230 V 3-phase

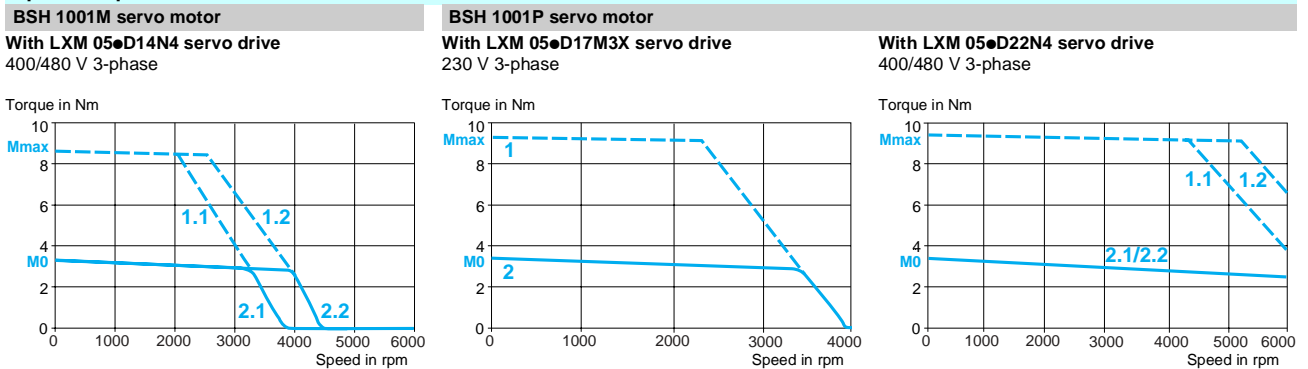


- 1 Peak torque
- 2 Continuous torque

### Characteristics of 1001M/1001P servo motors

Type of servo motor		BSH 1001M		BSH 1001P	
Associated with Lexium 05 servo drive		LXM 05 ●D14N4		LXM 05 ●D17M3X	LXM 05 ●D22N4
Line supply voltage	V	400/480 3-phase		230 3-phase	400/480 3-phase
Switching frequency	kHz	4			
Torque	Continuous stall $M_0$	Nm	3.4		3.3
	Peak stall $M_{max}$	Nm	8.5		9.45
Nominal operating point	Nominal torque	Nm	3.1		2.8
	Nominal speed	rpm	2000		4000
Maximum current	A rms	5.9		12	
<b>Servo motor characteristics</b>					
Maximum mechanical speed	rpm	6000			
Constants (at 120°C)	Torque	Nm/A rms	1.84		0.89
	Back emf	$V_{rms}/krpm$	112		60
Rotor	Number of poles		8		
	Inertia	Without brake $J_m$	kgcm <sup>2</sup>	1.40	
		With brake $J_m$	kgcm <sup>2</sup>	2.013	
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	18.4		3.8
	Inductance (phase/phase)	mH	61.5		17.6
	Electrical time constant	ms	3.34		4.63
Holding brake (depending on model)		See page 43748/2			

### Speed/torque curves



- 1 Peak torque
- 2 Continuous torque

- 1.1 Peak torque at 400 V 3-phase
- 2.1 Continuous torque at 400 V 3-phase

- 1.2 Peak torque at 480 V 3-phase
- 2.2 Continuous torque at 480 V 3-phase

### Characteristics of BSH 1001T servo motors

Type of servo motor		BSH 1001T		
Associated with Lexium 05 servo drive		LXM 05 ●D28F1	LXM 05 ●D28M2	LXM 05 ●D42M3X
Line supply voltage	V	115 single phase	230 single phase	230 3-phase
Switching frequency	kHz	8		
Torque	Continuous stall $M_0$	Nm	3.4	
	Peak stall $M_{max}$	Nm	8.5	
Nominal operating point	Nominal torque	Nm	3	2.8
	Nominal speed	rpm	2500	4000
Maximum current	A rms	23		

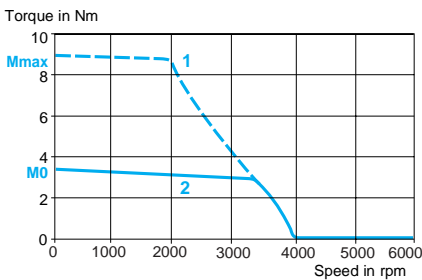
### Servo motor characteristics

Maximum mechanical speed	rpm	6000		
Constants (at 120°C)	Torque	Nm/A rms	0.52	
	Back emf	$V_{rms}/krpm$	28	
Rotor	Number of poles	8		
	Inertia	Without brake $J_m$	kgcm <sup>2</sup>	1.40
		With brake $J_m$	kgcm <sup>2</sup>	2.013
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	0.9	
	Inductance (phase/phase)	mH	4	
	Electrical time constant	ms	4.44	
Holding brake (depending on model)	See page 43748/2			

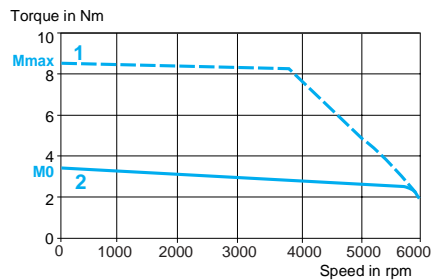
### Speed/torque curves

#### BSH 1001T servo motor

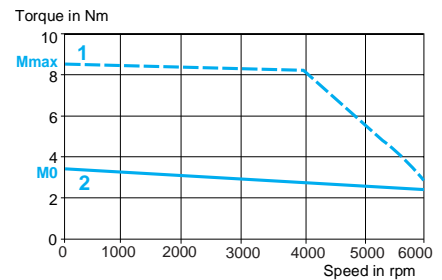
With LXM 05●D28F1 servo drive  
115 V single phase



With LXM 05●D28M2 servo drive  
230 V single phase



With LXM 05●D42M3X servo drive  
230 V 3-phase



- 1 Peak torque
- 2 Continuous torque

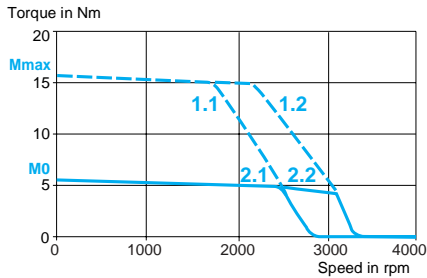
### Characteristics of BSH 1002M/1002P/1002T servo motors

Type of servo motor		BSH 1002M		BSH 1002P		BSH 1002T		
Associated with Lexium 05 servo drive		LXM 05 ●D14N4	LXM 05 ●D28M2	LXM 05 ●D17M3X	LXM 05 ●D22N4	LXM 05 ●D42M3X		
Line supply voltage	V	400/480 3-phase	230 single phase	230 3-phase	400/480 3-phase	230 3-phase		
Switching frequency	kHz	4		8				
Torque	Continuous stall	$M_0$	Nm	5.5	5.8	5.52		
	Peak stall	$M_{max}$	Nm	16	18.23	12.35	15.43	
Nominal operating point	Nominal torque	Nm	5.1	5.2	4.6		4.4	
	Nominal speed	rpm	2000		4000			
Maximum current	A rms	7.4	17.8		31.2			
<b>Servo motor characteristics</b>								
Maximum mechanical speed	rpm	6000						
Constants (at 120°C)	Torque	Nm/A rms	2.28	1.21		0.65		
	Back emf	$V_{rms}/krpm$	146	77		33		
Rotor	Number of poles		8					
	Inertia	Without brake	$J_m$	kgcm <sup>2</sup>				2.31
		With brake	$J_m$	kgcm <sup>2</sup>				2.923
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	8.6	2.4		0.6		
	Inductance (phase/phase)	mH	46.1	12.7		2.9		
	Electrical time constant	ms	5.98	5.91		6.00		
Holding brake (depending on model)		See page 43748/2						

### Speed/torque curves

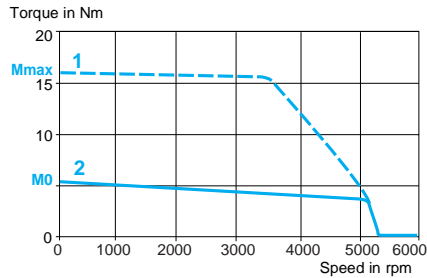
#### BSH 1002M servo motor

With LXM 05●D14N4 servo drive  
400/480 V 3-phase



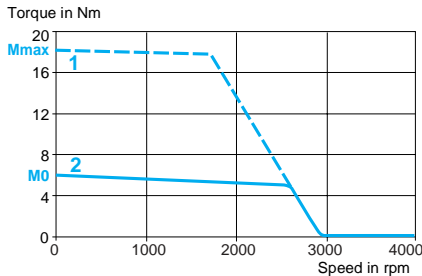
#### BSH 1002T servo motor

With LXM 05●D17M3X servo drive  
230 V 3-phase

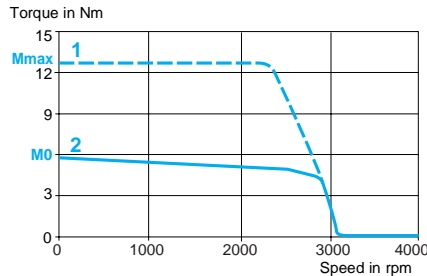


#### BSH 1002P servo motor

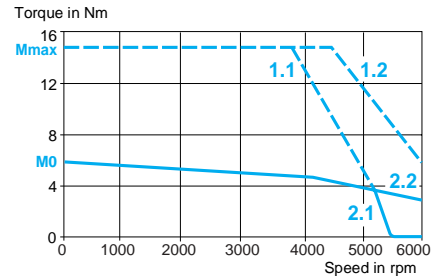
With LXM 05●D28M2 servo drive  
230 V single phase



With LXM 05●D17M3X servo drive  
230 V 3-phase



With LXM 05●D22N4 servo drive  
400/480 V 3-phase



- 1 Peak torque
- 2 Continuous torque

- 1.1 Peak torque at 400 V 3-phase
- 2.1 Continuous torque at 400 V 3-phase

- 1.2 Peak torque at 480 V 3-phase
- 2.2 Continuous torque at 480 V 3-phase



### Characteristics of BSH 1003M/1003P servo motors

Type of servo motor		BSH 1003M	BSH 1003P			
Associated with Lexium 05 servo drive		LXM 05 ●D22N4	LXM 05 ●D28M2	LXM 05 ●D42M3X	LXM 05 ●D34N4	
Line supply voltage	V	400/480 3-phase	230 single phase	230 3-phase	400/480 3-phase	
Switching frequency	kHz	4				
Torque	Continuous stall	$M_0$	Nm	7.8	8	
	Peak stall	$M_{max}$	Nm	27.28	22.79	28.31
Nominal operating point	Nominal torque	Nm	6.6	7		
	Nominal speed	rpm	2000			4000
Maximum current	A rms	15.6	28.3			

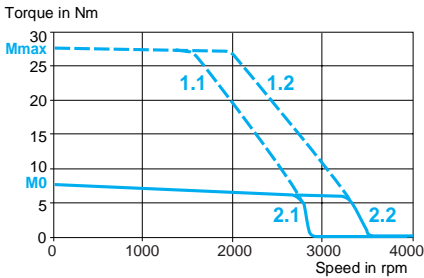
### Servo motor characteristics

Maximum mechanical speed	rpm	6000			
Constants (at 120°C)	Torque	Nm/A rms	2.24	1.12	
	Back emf	$V_{rms}/krpm$	144	77	
Rotor	Number of poles		8		
	Inertia	Without brake	$J_m$	kgcm <sup>2</sup>	
		With brake	$J_m$	kgcm <sup>2</sup>	
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	5.3	1.43	
	Inductance (phase/phase)	mH	33.7	8.8	
	Electrical time constant	ms	6.36	6.15	
	Holding brake (depending on model)		See page 43748/2		

### Speed/torque curves

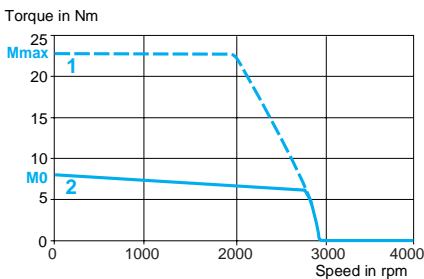
#### BSH 1003M servo motor

With LXM 05●D22N4 servo drive  
400/480 V 3-phase

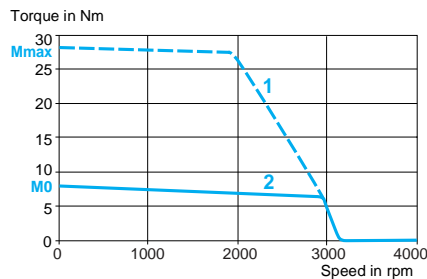


#### BSH 1003P servo motor

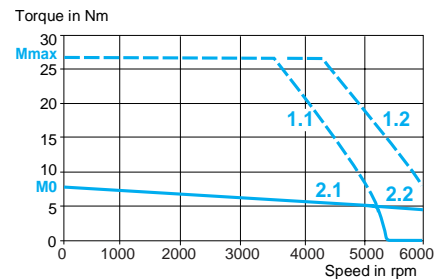
With LXM 05●D28M2 servo drive  
230 V single phase



With LXM 05●D42M3X servo drive  
230 V 3-phase



With LXM 05●D34N4 servo drive  
400/480 V 3-phase



- 1 Peak torque
- 2 Continuous torque

- 1.1 Peak torque at 400 V 3-phase
- 2.1 Continuous torque at 400 V 3-phase

- 1.2 Peak torque at 480 V 3-phase
- 2.2 Continuous torque at 480 V 3-phase

### Characteristics of BSH 1004P servo motors

Type of servo motor		BSH 1004P		
Associated with Lexium 05 servo drive		LXM 05●D42M3X	LXM 05●D34N4	LXM 05●D57N4
Line supply voltage	V	230 3-phase	400/480 3-phase	400/480 3-phase
Switching frequency	kHz	8		
Torque	Continuous stall	$M_0$	Nm	10
	Peak stall	$M_{max}$	Nm	30.41
Nominal operating point	Nominal torque	Nm	9.5	7.9
	Nominal speed	rpm	1500	3000
Maximum current	A rms	23.5		

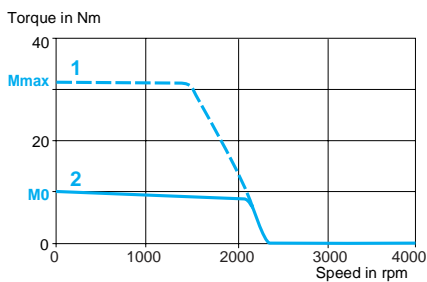
### Servo motor characteristics

Maximum mechanical speed	rpm	6000		
Constants (at 120°C)	Torque	Nm/A rms	1.62	
	Back emf	$V_{rms}/krpm$	103	
Rotor	Number of poles	8		
	Inertia	Without brake	$J_m$	kgcm <sup>2</sup>
		With brake	$J_m$	kgcm <sup>2</sup>
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	1.81	
	Inductance (phase/phase)	mH	11.8	
	Electrical time constant	ms	6.52	
Holding brake (depending on model)	See page 43748/2			

### Speed/torque curves

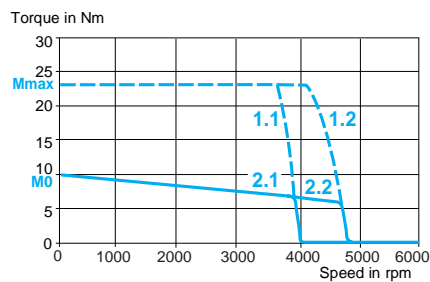
#### BSH 1004P servo motor

With LXM 05●D42M3X servo drive  
230 V 3-phase



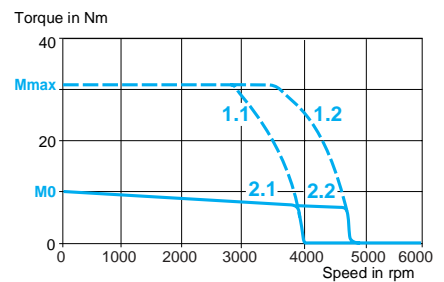
- 1 Peak torque
- 2 Continuous torque

With LXM 05●D34N4 servo drive  
400/480 V 3-phase



- 1.1 Peak torque at 400 V 3-phase
- 2.1 Continuous torque at 400 V 3-phase
- 1.2 Peak torque at 480 V 3-phase
- 2.2 Continuous torque at 480 V 3-phase

With LXM 05●D57N4 servo drive  
400/480 V 3-phase



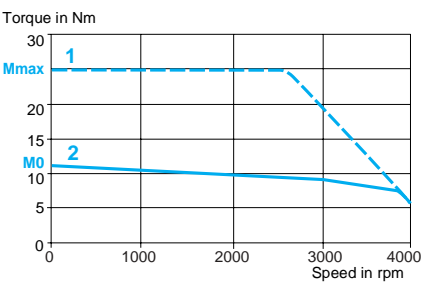
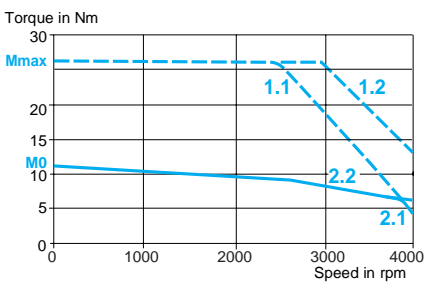
- 1.2 Peak torque at 480 V 3-phase
- 2.2 Continuous torque at 480 V 3-phase

Characteristics of BSH 1401P/1401T servo motors			
Type of servo motor		BSH 1401P	BSH 1401T
Associated with Lexium 05 servo drive		LXM 05●D34N4	LXM 05●D42M3X
Line supply voltage		V	400/480 3-phase
Switching frequency		kHz	4
Torque	Continuous stall	$M_0$	Nm
	Peak stall	$M_{max}$	Nm
Nominal operating point	Nominal torque	Nm	9.55
	Nominal speed	rpm	2500
Maximum current		A rms	20.8
			37.1
Servo motor characteristics			
Maximum mechanical speed		rpm	4000
Constants (at 120°C)	Torque	Nm/A rms	1.43
	Back emf	$V_{rms}/krpm$	100
Rotor	Number of poles		10
	Inertia	Without brake	$J_m$
		With brake	$J_m$
		kgcm <sup>2</sup>	7.41
		kgcm <sup>2</sup>	8.56
Stator (at 20°C)	Resistance (phase/phase)		Ω
	Inductance (phase/phase)		mH
	Electrical time constant		ms
			1.41
			15.6
			11.06
Holding brake (depending on model)			See page 43748/2

### Speed/torque curves

**BSH 1401P servo motor**  
 With LXM 05●D34N4 servo drive  
 400/480 V 3-phase

**BSH 1401T servo motor**  
 With LXM 05●D42M3X servo drive  
 230 V 3-phase



- 1 Peak torque
- 2 Continuous torque
- 1.1 Peak torque at 400 V 3-phase
- 2.1 Continuous torque at 400 V 3-phase
- 1.2 Peak torque at 480 V 3-phase
- 2.2 Continuous torque at 480 V 3-phase

### Characteristics of BSH 1402M/1402P/1402T servo motors

Type of servo motor		BSH 1402M	BSH 1402P		BSH 1402T	
Associated with Lexium 05 servo drive		LXM 05 ●D34N4	LXM 05 ●D42M3X	LXM 05 ●D57N4	LXM 05 ●D42M3X	
Line supply voltage	V	400/480 3-phase	230 3-phase	400/480 3-phase	230 3-phase	
Switching frequency	kHz	4				
Torque	Continuous stall	$M_0$	Nm	19.5		
	Peak stall	$M_{max}$	Nm	57.1	46.72	57.42
Nominal operating point	Nominal torque	Nm	17.1	13.7	12.3	14.44
	Nominal speed	rpm	1250	1500	3000	2000
Maximum current	A rms	22.4	44.1	75.2		

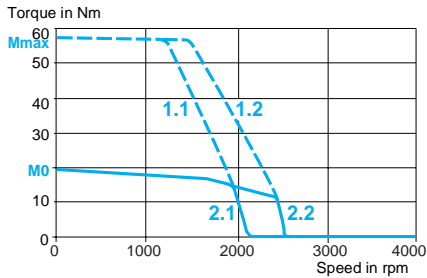
### Servo motor characteristics

Maximum mechanical speed	rpm	4000			
Constants (at 120°C)	Torque	Nm/A rms	2.91	1.47	0.87
	Back emf	$V_{rms}/krpm$	199	101	59
Rotor	Number of poles		10		
	Inertia	Without brake $J_m$	kgcm <sup>2</sup>	12.68	
		With brake $J_m$	kgcm <sup>2</sup>	13.83	
Stator (at 20°C)	Resistance (phase/phase)	$\Omega$	2.32	0.6	0.21
	Inductance (phase/phase)	mH	28.59	7.4	2.54
	Electrical time constant	ms	12.32	12.33	12.2
Holding brake (depending on model)		See page 43748/2			

### Speed/torque curves

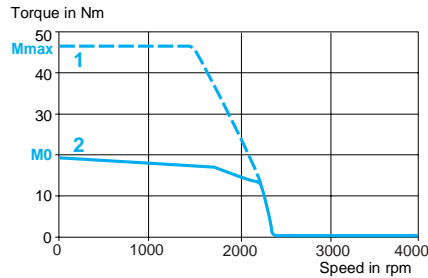
#### BSH 1402M servo motor

With LXM 05●D34N4 servo drive  
400/480 V 3-phase

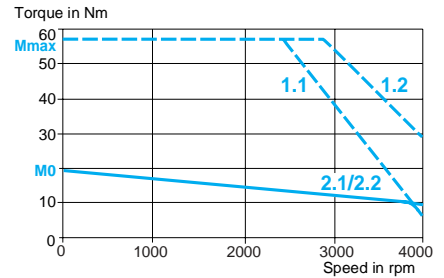


#### BSH 1402P servo motor

With LXM 05●D42M3X servo drive  
230 V 3-phase

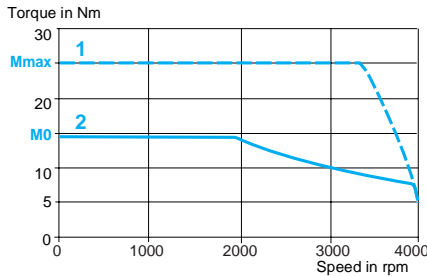


With LXM 05●D57N4 servo drive  
400/480 V 3-phase



#### BSH 1402T servo motor

With LXM 05●D42M3X servo drive 230 V 3-phase



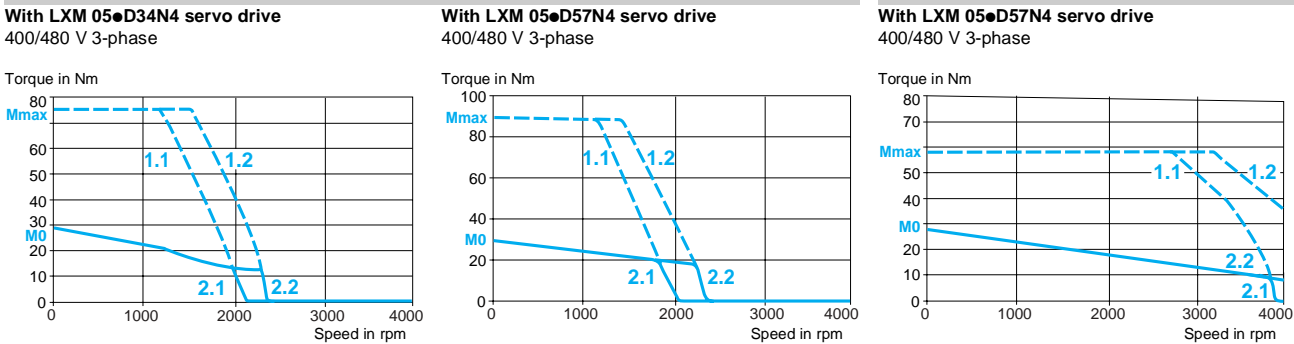
- 1 Peak torque
- 2 Continuous torque

- 1.1 Peak torque at 400 V 3-phase
- 2.1 Continuous torque at 400 V 3-phase

- 1.2 Peak torque at 480 V 3-phase
- 2.2 Continuous torque at 480 V 3-phase

Characteristics of BSH 1403M/1403P servo motors			
Type of servo motor		BSH 1403M	
Associated with Lexium 05 servo drive		LXM 05●D34N4	LXM 05●D57N4
Line supply voltage		V	
Switching frequency		kHz	
Torque	Continuous stall	$M_0$	Nm
	Peak stall	$M_{max}$	Nm
Nominal operating point	Nominal torque	Nm	Nm
	Nominal speed	rpm	rpm
Maximum current		A rms	
		400/480 3-phase	
		4	
		27.8	
		76.66	
		88.17	
		57.24	
		21.5	
		21.2	
		12.9	
		1250	
		1500	
		3000	
		27.5	
		75.2	
Servo motor characteristics			
Maximum mechanical speed		rpm	
Constants (at 120°C)	Torque	Nm/A rms	
	Back emf	$V_{rms}/krpm$	
Rotor	Number of poles		10
	Inertia	Without brake	$J_m$
		With brake	$J_m$
		kgcm <sup>2</sup>	kgcm <sup>2</sup>
Stator (at 20°C)	Resistance (phase/phase)		$\Omega$
	Inductance (phase/phase)		mH
	Electrical time constant		ms
Holding brake (depending on model)		See page 43748/2	

### Speed/torque curves



- 1.1 Peak torque at 400 V 3-phase
- 1.2 Peak torque at 480 V 3-phase
- 2.1 Continuous torque at 400 V 3-phase
- 2.2 Continuous torque at 480 V 3-phase

### Characteristics of BSH 1404M/1404P servo motors

Type of servo motor		BSH 1404M	BSH 1404P
Associated with Lexium 05 servo drive		LXM 05D57N4	
Line supply voltage		V 400/480 3-phase	
Switching frequency		kHz 4	
Torque	Continuous stall $M_0$	Nm	33.4
	Peak stall $M_{max}$	Nm	126.45 60.04
Nominal operating point	Nominal torque	Nm	26.3 16.1
	Nominal speed	rpm	1500 3000
Maximum current		A rms	47.8 95.6

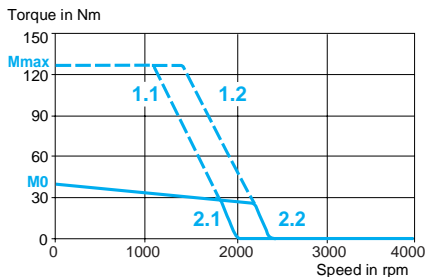
### Servo motor characteristics

Maximum mechanical speed		rpm	4000
Constants (at 120°C)	Torque	Nm/A rms	3.12 1.57
	Back emf	V <sub>rms</sub> /krpm	208 104
Rotor	Number of poles		10
	Inertia	Without brake $J_m$	kgcm <sup>2</sup> 23.70
		With brake $J_m$	kgcm <sup>2</sup> 29.20
Stator (at 20°C)	Resistance (phase/phase)	Ω	1.12 0.28
	Inductance (phase/phase)	mH	15.6 3.9
	Electrical time constant	ms	13.93
Holding brake (depending on model)			See page 43748/2

### Speed/torque curves

#### BSH 1404M servo motor

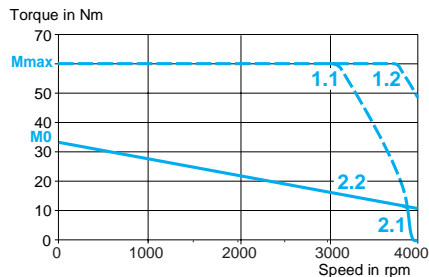
With LXM 05D57N4 servo drive  
400/480 V 3-phase



- 1.1 Peak torque at 400 V 3-phase  
2.1 Continuous torque at 400 V 3-phase

#### BSH 1404P servo motor

With LXM 05D57N4 servo drive  
400/480 V 3-phase



- 1.2 Peak torque at 480 V 3-phase  
2.2 Continuous torque at 480 V 3-phase

### Characteristics of BSH 2051M servo motors

Type of servo motor		BSH 2051M		
Associated with Lexium 05 servo drive		LXM 05●D57N4		
Line supply voltage		V	400/480 3-phase	
Switching frequency		kHz	4	
Torque	Continuous stall	$M_0$	Nm	36
	Peak stall	$M_{max}$	Nm	68.3
Nominal operating point	Nominal torque	Nm	33.5	
	Nominal speed	rpm	1500	
Maximum current		A rms	31.8	

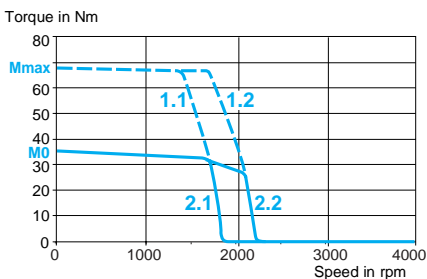
### Servo motor characteristics

Maximum mechanical speed		rpm	3800		
Constants (at 120°C)	Torque	Nm/A rms	3.16		
	Back emf	$V_{rms}/krpm$	208		
Rotor	Number of poles		10		
	Inertia	Without brake	$J_m$	kgcm <sup>2</sup>	62
		With brake	$J_m$	kgcm <sup>2</sup>	78
Stator (at 20°C)	Resistance (phase/phase)		$\Omega$	1.6	
	Inductance (phase/phase)		mH	15.2	
	Electrical time constant		ms	9.50	
Holding brake (depending on model)			See page 43748/2		

### Speed/torque curves

#### BSH 2051M servo motor

With LXM 05●D57N4 servo drive  
400/480 V 3-phase

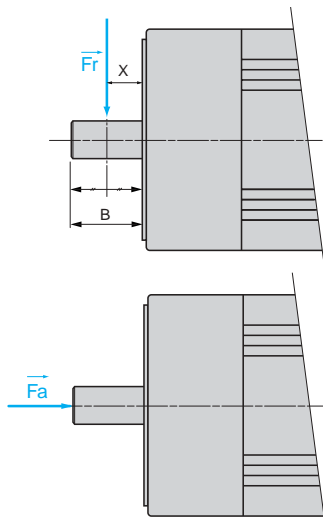


1.1 Peak torque at 400 V 3-phase

1.2 Peak torque at 480 V 3-phase

2.1 Continuous torque at 400 V 3-phase

2.2 Continuous torque at 480 V 3-phase



### Radial and axial forces permissible on the motor shaft

Even when the servo motors are used under optimum conditions, their lifetime is limited by that of the bearings.

#### Conditions

Nominal lifetime of bearings (1)	$L_{10h} = 20,000$ hours
Ambient temperature (temperature of bearings ~ 100°C)	40°C
Force application point	Fr applied at the middle of the shaft end $X = B/2$ (dimension B see pages 43747/5 to 43747/7)

(1) Hours of use with 10% probability of failure



#### The following conditions must be observed:

- Radial and axial forces must not be applied simultaneously.
- Shaft end with IP 40 or IP 65 protection.
- The bearings cannot be changed by the user as the built-in position sensor has to be realigned if the unit is dismantled.

Mechanical speed		rpm	Maximum radial force Fr							
			1000	2000	3000	4000	5000	6000	7000	8000
Servo motor	BSH 0551	N	340	270	240	220	200	190	180	170
	BSH 0552	N	370	290	260	230	220	200	190	190
	BSH 0553	N	390	310	270	240	230	210	200	190
	BSH 0701	N	660	520	460	410	380	360	–	–
	BSH 0702	N	710	560	490	450	410	390	–	–
	BSH 0703	N	730	580	510	460	430	400	–	–
	BSH 1001	N	900	720	630	570	530	–	–	–
	BSH 1002	N	990	790	690	620	–	–	–	–
	BSH 1003	N	1050	830	730	660	–	–	–	–
	BSH 1004	N	1070	850	740	–	–	–	–	–
	BSH 1401	N	2210	1760	1530	–	–	–	–	–
	BSH 1402	N	2430	1930	1680	–	–	–	–	–
	BSH 1403	N	2560	2030	1780	–	–	–	–	–
	BSH 1404	N	2660	2110	1840	–	–	–	–	–
	BSH 2051	N	3730	2960	2580	–	–	–	–	–

Maximum axial force:  $F_a = 0.2 \times F_r$

### Characteristics of servo motor-servo drive power connection cables

		VW3 M5 101R●●●	VW3 M5 102R●●●	VW3 M5 103R●●●
Outer cover, insulation		PUR (RAL 2003 orange), TPM or PP/PE		
Capacity	pF/m	< 70 (conductors/shielding)		
Number of conductors (shielded)		[[4 x 1.5 mm <sup>2</sup> + (2 x 1.0 mm <sup>2</sup> )] [[4 x 2.5 mm <sup>2</sup> + (2 x 1.0 mm <sup>2</sup> )] [[4 x 4 mm <sup>2</sup> + (2 x 1.0 mm <sup>2</sup> )]		
Connectors		1 industrial connector (motor side) and 1 end with flying leads (drive side)		
External diameter	mm	12 ± 0.2	14.3 ± 0.3	16.3 ± 0.3
Curvature radius	mm	90, suitable for daisy-chain, cable carrier chain	110, suitable for daisy-chain, cable carrier chain	125, suitable for daisy-chain, cable carrier chain
Operating voltage	V	600		
Maximum length	m	75 (1)		
Operating temperature	°C	- 40...+ 90 (fixed), - 20...+ 80 (mobile)		
Certifications		UL, CSA, VDE, C€, DESINA		

### Characteristics of servo motor-servo drive encoder connection cables

		VW3 M8 101R●●●
Encoder type		SinCos encoder
Outer cover, insulation		PUR (RAL 6018 green), polyester
Number of conductors (shielded)		5 x (2 x 0.25 mm <sup>2</sup> ) + (2 x 0.5 mm <sup>2</sup> )
External diameter	mm	8.8 ± 0.2
Connectors		1 industrial connector (motor side) and 1 x 12-way Molex connector (drive side)
Min. curvature radius	mm	68, suitable for daisy-chain, cable carrier chain
Operating voltage	V	350 (0.25 mm <sup>2</sup> ), 500 (0.5 mm <sup>2</sup> )
Maximum length	m	75 (1)
Operating temperature	°C	- 50...+ 90 (fixed) - 40...+ 80 (mobile)
Certifications		UL, CSA, VDE, C€, DESINA

(1) For cables longer than 75 m, please consult your Regional Sales Office.