

PacDrive 3

automation solution

Lexium SH3/MH3/SHS servo motors

Catalog

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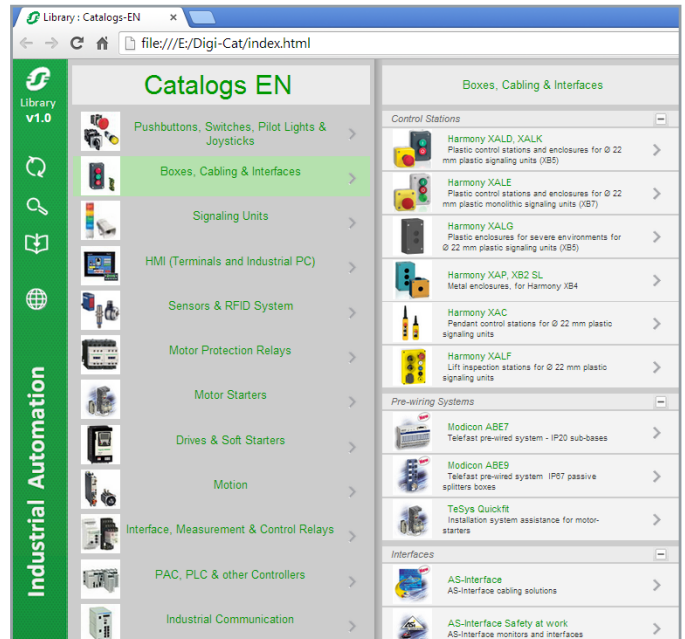
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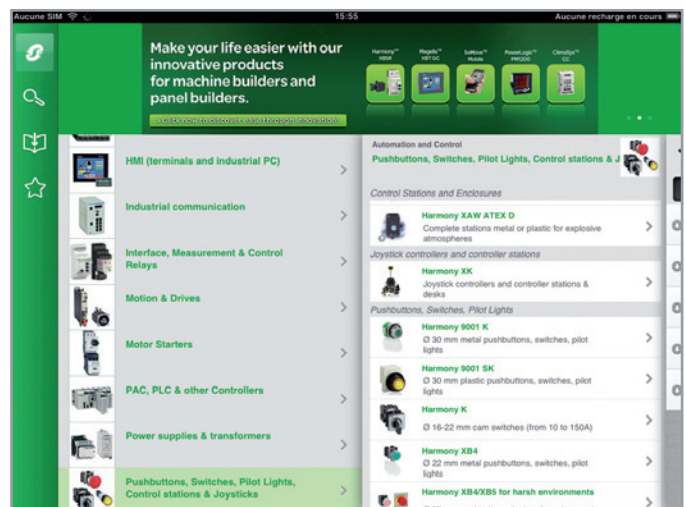
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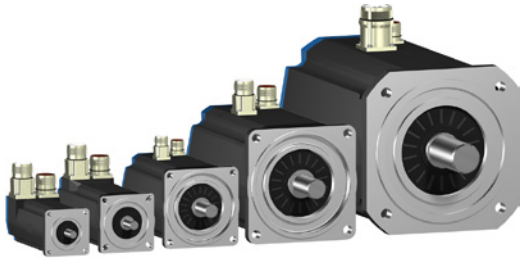
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PacDrive 3 automation solution

Lexium SH3/MH3/SHS servo motors

Lexium SH3 servo motors




Lexium SH3 servo motors range

Presentation

Lexium SH3 servo motors are an excellent solution to the need for dynamic performance. Five flange sizes and a variety of lengths, this offer is a suitable solution for many applications, covering a continuous stall torque range from 0.5 to 33.4 Nm (0.4 to 24.6 lbf ft) for speeds up to 8,000 rpm.

Thanks to their new winding technology based on salient poles, Lexium SH3 servo motors are far more compact and offer a higher power density than conventional servo motors.

Lexium SH3 servo motors are UL Recognized  and conform to UL1004 as well as European directives (CE marking).

They are available with the following variants:

- 5 flange sizes: 55, 70, 100, 140, and 205 mm (2.28, 2.76, 3.94, 5.51, and 8.071 in.)
- 2 degrees of protection for the shaft end:
 - IP 54 or IP 65 in accordance with IEC/EN 60529
 - The degree of protection provided by the casing is IP 65 (IP 67 with the conformity kit, which is available as an option).
- With or without holding brake
- Straight or elbow connectors for power and encoder connection
- Integrated single-turn or multi-turn SinCos Hiperface® encoder (medium or high resolution)
- Smooth or keyed shaft end


Special features

Lexium SH3 servo motors have been developed to comply with the following main specifications:

- The ambient operating temperature is - 20...+ 40 °C / - 4...+ 104 °F without derating, in accordance with IEC 60721-3-3, category 3K3, and up to 55 °C / 131 °F with derating of 1% of the nominal output power per additional °C above 40 °C / 104 °F.
- The maximum operating altitude is 1,000 m / 3,280 ft without derating, 2,000 m / 6,561 ft with k = 0.86, and 3,000 m / 9,842 ft with k = 0.8 (1).
- The relative humidity that the servo motor can withstand is in line with IEC 60721-3-3, categories 3K3, 3Z12, and 3Z2.
- The windings are insulation class F (maximum temperature for windings 155 °C / 311 °F, in accordance with IEC 60034-1).
- All mounting positions are permitted (horizontal mounting (IMB5) or vertical mounting (IMV1 with shaft end at the top and IMV3 with shaft end at the bottom) in accordance with IEC 60034-7.

Holding brake

Lexium SH3 servo motors can be equipped with an electromagnetic holding brake.

 *Do not use the holding brake as a dynamic brake for deceleration, as this will quickly damage the brake.*

Integrated encoder

Lexium SH3 servo motors are equipped with a single-turn (131,072 points/turn) (2) or multi-turn (131,072 points/turn x 4,096 turns) (1) SinCos Hiperface® high-resolution absolute encoder, giving an angular shaft position that is precise to less than ± 1.3 arc minutes.

This encoder performs the following functions:

- Gives the absolute position of the motor to allow flow synchronization
- Measures the servo motor speed via the associated Lexium 52 / 62 servo drive (this information is used by the servo drive's speed controller)
- Measures the position information for the servo drive's position controller
- Sends data from the servo motor to the servo drive, which provides automatic identification of the motor when the servo drive starts

Description

Lexium SH3 servo motors, with a 3-phase stator and a 6 to 10-pole rotor (depending on model) with Neodymium-Iron-Borium (NdFeB) magnets, consist of:

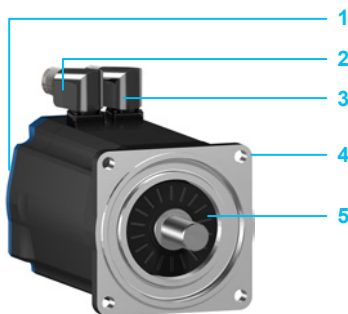
- 1 Casing with RAL 9005 opaque black paint protective coating
- 2 Threaded sealed male elbow connector for the power cable (3)
- 5 Threaded sealed male elbow connector for the control cable (encoder) (3)
- 4 4-point axial mounting flange
- 3 Smooth or keyed shaft end (depending on the model)

Cables and connectors to be ordered separately, for connection to Lexium 52 / 62 servo drives. Schneider Electric has taken particular care with the compatibility of Lexium SH3 servo motors and Lexium 52 / 62 servo drives. This compatibility is possible only when using cables and connectors sold by Schneider Electric. [See page 11.](#)

(1) k: derating factor

(2) Encoder resolution given for use with Lexium 52 / 62 servo drives.

(3) For other model with rotatable elbow connector, [see page 3.](#)



PacDrive 3 automation solution

Lexium SH3/MH3/SHS servo motors

Lexium SH3 servo motors

Lexium SH3 servo motors – references

The Lexium SH3 servo motors shown below are supplied without a gearbox. For GBX and GBY gearboxes, Please refer to our catalog "GBX and GBY Planetary gearboxes".

Technical datas													
Nominal servo motor output power		Continuous stall torque		Peak stall torque		Rated torque		Rated speed		Rotor moment of inertia (without holding brake)	Reference	Weight without holding brake (with holding brake)	
Pn	M0	Mmax	Mn	Nn	Nmax	Jm							
kW /hp	Nm /ft-lbf	Nm /ft-lbf	Nm /ft-lbf	rpm	rpm	kgcm ²					kg	lb	
0.4	0.5	0.5	0.4	1.5	1.1	0.5	0.4	8000	9000	0.057 (0.079)	SH30551P●	1.200 (1.300)	2.65 (2.83)
0.6	0.8	0.8	0.6	2.5	1.8	0.7	0.3	8000	9000	0.093 (0.115)	SH30552P●	1.500 (1.600)	3.31 (3.49)
0.9	1.2	1.2	0.9	3.5	2.6	1.0	0.7	8000	9000	0.130 (0.152)	SH30553P●	1.700 (1.800)	3.75 (4.15)
0.8	1.0	1.4	1.0	3.5	2.6	1.3	1.0	6000	8000	0.205 (0.318)	SH30701P●	1.900 (2.100)	4.19 (4.63)
1.2	1.6	2.2	1.6	7.6	5.6	1.9	1.4	6000	8000	0.351 (0.464)	SH30702P●	2.800 (3.000)	6.12 (6.66)
1.5	2.0	3.1	2.3	11.3	8.3	2.3	1.7	6000	8000	0.503 (0.616)	SH30703P●	3.400 (3.500)	7.50 (7.72)
1.4	1.9	3.3	2.4	9.6	7.1	2.7	2.0	5000	6000	1.100 (1.613)	SH31001P●	4.400 (4.900)	9.70 (10.80)
1.9	2.5	5.8	4.3	18.3	13.5	4.6	3.4	4000	6000	1.909 (2.422)	SH31002P●	6.000 (6.500)	13.23 (14.33)
2.4	3.2	8.0	5.9	28.3	20.8	5.7	4.2	4000	6000	2.718 (3.521)	SH31003P●	7.700 (8.400)	16.98 (18.52)
2.5	3.4	10.0	7.4	40.5	29.9	7.9	5.8	3000	6000	3.613 (4.416)	SH31004P●	9.400 (10.300)	20.72 (22.71)
2.9	3.9	11.1	8.2	27	1.5	9.2	6.8	3000	4000	6.941 (8.542)	SH31401P●	11.500 (12.900)	25.35 (28.44)
3.9	5.2	19.5	14.4	60.1	44.3	12.3	9.1	3000	4000	12.162 (14.824)	SH31402P●	16.500 (18.100)	36.38 (39.90)
4.1	5.4	27.8	20.5	90.2	66.5	12.9	9.5	3000	4000	17.383 (21.559)	SH31403P●	21.900 (24.000)	48.28 (52.91)
5.06	6.8	33.4	24.6	131.9	97.3	16.1	11.2	3000	4000	22.604 (26.794)	SH31404P●	27.000 (29.300)	59.52 (64.60)
5.5	7.4	36.9	27.2	110	81.1	17.5	12.9	3000	3800	71.40 (87.40)	SH32051P●	35.000 (38.600)	77.17 (85.1)
7.9	10.7	64.9	47.9	220	162.3	38.1	28.1	2000	3800	129 (145)	SH32052P●	50.000 (53.600)	110.23 (118.2)
10.6	14.2	94.4	69.6	330	243.4	50.7	37.4	2000	3800	190 (206)	SH32053P●	67.000 (70.600)	147.71 (155.65)
0.7	0.9	2.2	1.6	7.6	5.6	2.1	1.6	3000	8000	0.351 (0.464)	SH30702M●	2.800 (3.000)	6.17 (6.61)
0.9	1.2	3.1	2.3	11.3	8.3	2.8	2.1	3000	8000	0.503 (0.616)	SH30703M●	3.400 (3.500)	7.50 (7.72)
0.8	1.1	3.3	2.4	9.6	7.1	3	2.2	2500	6000	1.100 (1.613)	SH31001M●	4.400 (4.900)	9.70 (10.80)
1.9	2.6	5.8	4.3	18.3	13.5	5.2	3.4	2000	6000	1.909 (2.422)	SH31002M●	7.700 (8.400)	16.98 (18.52)
1.5	2.0	8	5.9	28.3	20.9	7	5.2	2000	6000	2.718 (3.521)	SH31003M●	11.500 (12.900)	25.35 (28.44)
1.7	2.2	11.1	8.2	27	19.9	10.6	7.8	1500	4000	6.941 (8.542)	SH31401M●	11.900 (13.000)	26.24 (28.67)

To order a Lexium SH3 servo motor, complete each reference with:

	SH3	●	●	●	●	●	●	●	●	●	●●
Flange size	55 mm / 2.165 in.	055									
	70 mm / 2.756 in.	070									
	100 mm / 3.937 in.	100									
	140 mm / 5.512 in.	140									
	205 mm / 8.071 in.	205									
Length	1 stack		1								
	2 stacks		2								
	3 stacks		3								
	4 stacks		4								
Winding	Optimized in terms of torque and speed of rotation			P							
	Optimized in terms of current (available only on specific models)			M							
Shaft end	Smooth				0						
	Keyed				1						
Integrated sensor High resolution, optical	Single-turn, SinCos Hiperface® 131,072 points/turn (1)					1					
	Multi-turn, SinCos Hiperface® 131,072 points/turn x 4,096 turns (1)					2					
Holding brake	Without							A			
	With							F			
Connections	Straight connector								1		
	Angular connector 90°, can be rotated								2		
Degree of protection	IP54 / IP65 (shaft / housing)									0	
	IP65 / IP65 (shaft / housing)									1	
	IP65 / IP67 (shaft / housing)									2	
Motor type	Standard										00

(1) Sensor resolution given for use with a Lexium 52 / 62 servo drive.

PacDrive 3 automation solution

Lexium SH3/MH3/SHS servo motors

Lexium SH3 servo motors

Lexium SH3 servo motor and Lexium 52 servo drive – combination									
Lexium 52 Servo drives	Servo motors	Motor			Servo drive				
Reference	Reference	Size	Winding	I _o	I _{nom}	I _{peak}	Standard		
				A	A	A	I _{nom}	I _{peak}	
							A @ 8 kHz	A	
LXM52DU60C41000	SH3	0551	P	0.73	0.62	2.9	1.5	6	
		0552	P	1.2	1.1	4.8	1.5	6	
		0702	M	1.5	1.5	6	1.5	6	
LXM52DD12C41000	SH3	0553	P	1.7	1.35	6.5	3	12	
		0701	P	1.8	1.6	5.7	3	12	
		0702	P	2.9	2.6	11.8	3	12	
		0703	M	2.1	1.9	8.7	3	12	
		1001	M	1.8	1.6	6.3	3	12	
		1002	M	2.5	2.3	9	3	12	
LXM52DD18C41000	SH3	0703	P	4.1	3	17	6	18	
		1001	P	3.5	2.8	12	6	18	
		1002	P	4.8	3.8	17.1	6	18	
		1003	M	3.4	3.1	14.7	6	18	
		1401	M	4	4	10.8	6	18	
LXM52DD30C41000	SH3	1003	P	6.6	4.9	28.3	10	30	
		1004	P (1)	6.2	5.3	32.3	10	30	
		1401	P	7.8	6.8	20.8	10	30	
LXM52DD72C41000	SH3	1004	P	6.2	5.3	32.3	24	72	
		1402	P	13.2	8.9	44.1	24	72	
		1403	P	17.6	8.7	61	24	72	
		1404	P (1)	21.3	11	95.6	24	72	
		2051	P (1)	21	11.5	87.2	24	72	
		2052	P (1)+(2)	25.7	17.8	96.8	24	72	
		2053	P (1)+(2)	33.2	20.4	136.1	24	72	

Lexium SH3 servo motor and Lexium 62 servo drive – combination										
Lexium 62 Servo Drives	Servo motors	Motor			Servo drive					
Reference	Reference	Size	Winding	I _o	I _{nom}	I _{peak}	Standard			
				A	A	A	I _{nom}	I _{peak}		I _{peak}
							A @ 4 kHz	A @ 8 kHz	A @ 16 kHz A	
LXM62DU60●21000	SH3	0551	P	0.73	0.62	2.9	2	2	1.2	6
		0552	P	1.2	1.1	4.8	2	2	1.2	6
		0702	M	1.5	1.5	6	2	2	1.2	6
		0553	P (1)	1.7	1.35	6.5	2	2	1.2	6
		0701	P	1.8	1.6	5.7	2	2	1.2	6
LXM62DD15●21000	SH3	0702	P	2.9	2.6	11.8	5	5	3.5	15
LXM62DU60●21000	SH3	0703	M (1)+(2)	2.1	1.9	8.7	2	2	1.2	6
		1001	M (1)	1.8	1.6	6.3	2	2	1.2	6
LXM62DD15●21000	SH3	1002	M	2.5	2.3	9	5	5	3.5	15
		0703	P (1)	4.1	3	17	5	5	3.5	15
		1001	P	3.5	2.8	12	5	5	3.5	15
		1002	P (1)	4.8	3.8	17.1	5	5	3.5	15
		1003	M	3.4	3.1	14.7	5	5	3.5	15
LXM62DD27●21000	SH3	1401	M	4	4	10.8	5	5	3.5	15
		1003	P (1)	6.6	4.9	28.3	9	7	4	27
		1004	P (1)	6.2	5.3	32.3	9	7	4	27
LXM62DD45●21000	SH3	1401	P	6.8	7.8	20.8	9	7	4	27
		1402	P	13.2	8.9	44.1	20	15	8	45
		1403	P (1)	17.6	8.7	61	20	15	8	45
LXM62DC13●21000 or LXM62DD45●21000 (1)	SH3	1404	P	21.3	11	95.6	50	50	30	130
		2051	P	21	11.5	87.2	50	50	30	130
LXM62DC13●21000	SH3	2052	P	25.7	17.8	96.8	50	50	30	130
		2053	P (1)	33.2	20.4	136.1	50	50	30	130

(1) Drive peak current lower than motor peak current
 (2) Continuous torque limited by nominal drive current

PacDrive 3 automation solution

Lexium SH3/MH3/SHS servo motors

Lexium SH3 servo motors

Lexium SH3 servo motors – dimensions						
Dimensions (overall)						
Servo motors	Flange		W x H x D (1)			
	mm	in.	Without holding brake		With holding brake	
mm			in.	mm	in.	
SH30551●	55 x 55	2.16 x 2.16	55 x 94.5 x 132.5	2.16 x 3.72 x 5.22	55 x 94.5 x 159	2.16 x 3.72 x 6.26
SH30552●	55 x 55	2.16 x 2.16	55 x 94.5 x 154.5	2.16 x 3.72 x 6.08	55 x 94.5 x 181	2.16 x 3.72 x 7.13
SH30553●	55 x 55	2.16 x 2.16	55 x 94.5 x 176.5	2.16 x 3.72 x 6.95	55 x 94.5 x 203	2.16 x 3.72 x 7.99
SH30701●	70 x 70	2.76 x 2.76	70 x 111.5 x 154	2.76 x 4.39 x 6.06	70 x 111.5 x 180	2.76 x 4.39 x 7.09
SH30702●	70 x 70	2.76 x 2.76	70 x 111.5 x 187	2.76 x 4.39 x 7.36	70 x 111.5 x 213	2.76 x 4.39 x 8.39
SH30703●	70 x 70	2.76 x 2.76	70 x 111.5 x 220	2.76 x 4.39 x 8.66	70 x 111.5 x 254	2.76 x 4.39 x 10.00
SH31001●	100 x 100	3.94 x 3.94	100 x 138.5 x 169	3.94 x 5.45 x 6.65	100 x 138.5 x 200	3.94 x 5.45 x 7.87
SH31002●	100 x 100	3.94 x 3.94	100 x 138.5 x 205	3.94 x 5.45 x 8.07	100 x 138.5 x 236	3.94 x 5.45 x 9.29
SH31003●	100 x 100	3.94 x 3.94	100 x 138.5 x 241	3.94 x 5.45 x 9.49	100 x 138.5 x 272	3.94 x 5.45 x 10.71
SH31004●	100 x 100	3.94 x 3.94	100 x 138.5 x 277	3.94 x 5.45 x 10.91	100 x 138.5 x 308	3.94 x 5.45 x 12.13
SH31401●	140 x 140	5.51 x 5.51	140 x 178 x 218	5.51 x 7.01 x 8.58	140 x 178 x 256	5.51 x 7.01 x 10.08
SH31402●	140 x 140	5.51 x 5.51	140 x 192.5 (2) x 273	5.51 x 7.58 (2) x 10.75	140 x 192.5 (2) x 311	5.51 x 7.58 (2) x 12.24
SH31403●	140 x 140	5.51 x 5.51	140 x 192.5 (2) x 328	5.51 x 7.58 (2) x 12.91	140 x 192.5 (2) x 366	5.51 x 7.58 (2) x 14.41
SH31404●	140 x 140	5.51 x 5.51	140 x 192.5 (2) x 383	5.51 x 7.58 (2) x 15.08	140 x 192.5 (2) x 421	5.51 x 7.58 (2) x 16.58
SH32051●	205 x 205	8.07 x 8.07	205 x 259 x 321	8.07 x 10.20 x 12.64	205 x 259 x 370.5	8.07 x 10.20 x 14.59
SH32052●	205 x 205	8.07 x 8.07	205 x 259 x 405	8.07 x 10.20 x 15.94	205 x 259 x 454.5	8.07 x 10.20 x 17.89
SH32053●	205 x 205	8.07 x 8.07	205 x 259 x 489	8.07 x 10.20 x 19.25	205 x 259 x 538.5	8.07 x 10.20 x 21.20

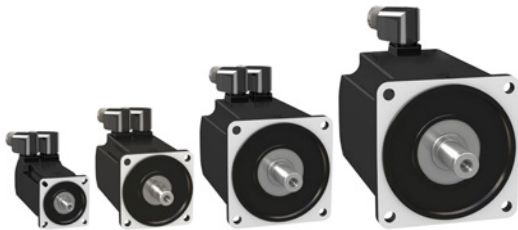
(1) D = motor length (excluding shaft end).

(2) 192.5 mm / 7.58 in. with straight connector, 198.5 mm / 7.82 in. with rotatable elbow connector.

PacDrive 3 automation solution

Lexium SH3/MH3/SHS servo motors

Lexium MH3 servo motors




Lexium MH3 servo motor range

Presentation

Lexium MH3 servo motors provide excellent power density values to meet the requirements of compact machines. With four flange sizes and three different lengths for each flange size, they are suitable for many applications, covering a continuous stall range from 1.4 to 65 Nm (1.0 to 47.9 lbf ft) for speeds up to 6,000 rpm.

The Lexium MH3 servo motors have a medium inertia motor, which means they are particularly suitable for high-load applications.

They help to simplify installation and adjustment by providing robust adjustment of the movement.

Lexium MH3 servo motors are UL Recognized  and conform to UL1004 as well as European directives (CE marking).

They are available with the following variants:


- 4 flange sizes: 70, 100, 140, and 190 mm (2.76, 3.94, 5.51, and 7.48 in.)
- Degree of protection:
 - IP 65 for the shaft end in accordance with IEC/EN 60529 (IP 67 with the conformity kit, which is available as an option)
 - IP 65 for the casing (IP 67 with the conformity kit, which is available as an option)
- With or without holding brake
- Elbow connectors for power and encoder connection
- Integrated single-turn or multi-turn SinCos Hiperface® encoder (medium or high resolution)
- Smooth or keyed shaft end

Special features

Lexium MH3 servo motors have been developed to comply with the following main specifications:

- The ambient operating temperature is - 20...+ 40 °C / - 4...+ 104 °F without derating, in accordance with IEC 60721-3-3, category 3K3, and up to 55 °C / 131 °F with derating of 1% of the nominal output power per additional °C above 40 °C / 104 °F.
- The maximum operating altitude is 1,000 m / 3,280 ft without derating, 2,000 m / 6,561 ft with k = 0.86, and 3,000 m / 9,842 ft with k = 0.8 (1).
- The relative humidity that the servo motor can withstand is in line with IEC 60721-3-3, categories 3K3, 3Z12, and 3Z2.
- The windings are insulation class F (maximum temperature for windings 155 °C / 311 °F) in accordance with IEC 60034-1.
- All mounting positions are permitted (horizontal mounting (IMB5) or vertical mounting (IMV1 with shaft end at the top and IMV3 with shaft end at the bottom) in accordance with IEC 60034-7.

Holding brake

Lexium MH3 servo motors can be equipped with an electromagnetic holding brake.  Do not use the holding brake as a dynamic brake for deceleration, as this will quickly damage the brake.

Integrated encoder

Lexium MH3 servo motors include an absolute encoder as standard equipment. This encoder performs the following functions:

- Gives the absolute position of the motor to allow flow synchronization
- Measures the servo motor speed via the associated Lexium 52 / 62 servo drive (this information is used by the servo drive's speed controller)
- Measures the position information for the servo drive's position controller
- Sends data from the servo motor to the servo drive, which provides automatic identification of the motor when the servo drive starts

Four types of encoder are available:

- High resolution SinCos Hiperface® encoder:
 - Single-turn (131,072 points/turn) (2)
 - Multi-turn (131,072 points/turn x 4,096 turns) (2)
 These encoders give an angular shaft position that is precise to less than ± 1.3 arc minutes.
- Medium resolution SinCos Hiperface® encoder:
 - Single-turn (32,768 points/turn) (2)
 - Multi-turn (32,768 points/turn x 4,096 turns) (2)
 These encoders give an angular shaft position that is precise to less than ± 4.8 arc minutes.

(1) k: derating factor

(2) Encoder resolution given for use with a Lexium 52 and Lexium 62 servo drives.

PacDrive 3 automation solution

Lexium SH3/MH3/SHS servo motors

Lexium MH3 servo motors

Lexium MH3 servo motor and Lexium 52 servo drive – combination									
Lexium 52 servo drive	Servo motors		Motor			Servo drive			
Reference	Reference		Size	Winding	Io	Inom	Ipeak	Inom	Ipeak
					A	A	A	A @ 8 kHz	A
LXM52DU60C41000	MH3	0701	P	(1)	1.78	1.72	5.97	1.5	6
LXM52DD12C41000	MH3	0702	P		2.94	2.49	9.68	3	12
		0703	P	(2)	3.91	3.02	12.57	3	12
		1001	P		3.15	2.82	11.20	3	12
LXM52DD18C41000	MH3	1002	P		5.04	4.10	17.50	6	18
LXM52DD30C41000	MH3	1003	P		7.69	6.07	26.71	10	30
		1401	P		8.58	6.35	29.80	10	30
LXM52DD72C41000	MH3	1402	P		16.83	9.76	57.42	24	72
		1403	P		18.00	10.42	62.32	24	72
		1901	P	(2)	23.2	14.00	89.6	24	72
		1902	P	(2)	30.8	19.30	114	24	72
		1903	P	(2)	36.1	21.30	124.5	24	72

Lexium MH3 servo motor and Lexium 62 servo drive – combination											
Lexium 62 servo drive	Servo motors		Motor			Servo drive					
Reference	Reference		Size	Winding	Io	Inom	Ipeak	Standard			
					A	A	A	A @ 4 kHz	A @ 8 kHz	A @ 16 kHz	A
LXM62DU60●21000	MH3	0701	P		1.78	1.72	5.97	2	2	1.2	6
LXM62DD15●21000	MH3	0702	P		2.94	2.49	9.68	5	5	3.5	15
		0703	P		3.91	3.02	12.57	5	5	3.5	15
		1001	P		3.15	2.82	11.20	5	5	3.5	15
LXM62DD27●21000	MH3	1002	P		5.04	4.10	17.50	9	7	4	27
LXM62DD45●21000	MH3	1003	P		7.69	6.07	26.71	9	7	4	45
		1401	P		8.58	6.35	29.80	20	15	8	45
LXM62DC13●21000 or LXM62DD45●21000 (1)	MH3	1402	P		16.83	9.76	57.42	50	50	30	130
		1403	P		18.00	10.42	62.32	50	50	30	130
		1901	P		23.2	14.00	89.6	50	50	30	130
LXM62DC13●21000	MH3	1902	P		30.8	19.30	114	50	50	30	130
		1903	P		36.1	21.30	124.5	50	50	30	130

(1) Continuous torque limited by nominal drive current.
 (2) Drive peak current lower than motor peak current.

Lexium MH3 servo motors – dimensions (overall)						
Servo motors	Flange size		Width x Height x Depth (1)			
			Without integrated holding brake		With integrated holding brake	
	mm	in.	mm	in	mm	in
MH30701PP●	70 x 70	2.76 x 2.76	70 x 109.5 x 122	2.76 x 4.31 x 4.80	70 x 109.5 x 161	2.76 x 4.31 x 6.34
MH30702PP●	70 x 70	2.76 x 2.76	70 x 109.5 x 154	2.76 x 4.31 x 6.06	70 x 109.5 x 193	2.76 x 4.31 x 7.60
MH30703PP●	70 x 70	2.76 x 2.76	70 x 109.5 x 186	2.76 x 4.31 x 7.32	70 x 109.5 x 225	2.76 x 4.31 x 8.86
MH31001PP●	100 x 100	3.94 x 3.94	100 x 139.5 x 128	3.94 x 5.49 x 5.04	100 x 139.5 x 170	3.94 x 5.49 x 6.69
MH31002PP●	100 x 100	3.94 x 3.94	100 x 139.5 x 160	3.94 x 5.49 x 6.30	100 x 139.5 x 202	3.94 x 5.49 x 7.95
MH31003PP●	100 x 100	3.94 x 3.94	100 x 139.5 x 192	3.94 x 5.49 x 7.56	100 x 139.5 x 234	3.94 x 5.49 x 9.21
MH31401PP●	140 x 140	5.51 x 5.51	140 x 179.5 x 152	5.51 x 7.07 x 5.98	140 x 179.5 x 187	5.51 x 7.07 x 7.36
MH31402PP●	140 x 140	5.51 x 5.51	140 x 179.5 x 192	5.51 x 7.07 x 7.56	140 x 179.5 x 227	5.51 x 7.07 x 8.94
MH31403PP●	140 x 140	5.51 x 5.51	140 x 179.5 x 232	5.51 x 7.07 x 9.13	140 x 179.5 x 267	5.51 x 7.07 x 10.51
MH31901PP●	190 x 190	7.48 x 7.48	190 x 257 x 190	7.48 x 10.12 x 7.48	190 x 257 x 248	7.48 x 10.12 x 9.76
MH31902PP●	190 x 190	7.48 x 7.48	190 x 257 x 250	7.48 x 10.12 x 9.84	190 x 257 x 308	7.48 x 10.12 x 12.13
MH31903PP●	190 x 190	7.48 x 7.48	190 x 257 x 310	7.48 x 10.12 x 12.21	190 x 257 x 368	7.48 x 10.12 x 14.49

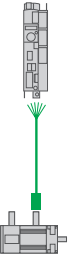
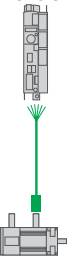
(1) D: Housing dimensions (without shaft).

PacDrive 3 automation solution

Lexium SH3/MH3/SHS servo motors

Lexium SH3 / MH3 servo motors – Connection elements

Connection elements for Lexium SH3 / MH3 servo motors and Lexium 52 / 62 servo drives

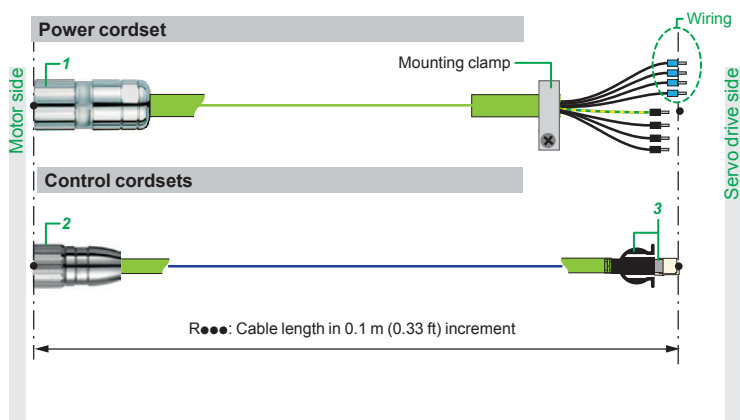
Designation	Description	From Lexium servo motor	To servo drive	Composition (mm ² / inch ²)	Length		Reference	Weight					
					m	ft.		kg	lb				
Power cordsets 	Cables equipped with an M23 industrial connector (servo motor end) and a free end (servo drive end)	SH3/MH3	Lexium 52 Lexium 62	1.5 / 0.002	5	16.404	VW3E1143R050	1.367	3.01				
					10	32.808	VW3E1143R100	2.602	5.74				
					15	49.213	VW3E1143R150	3.837	8.46				
					20	65.617	VW3E1143R200	5.072	11.18				
					25	82.021	VW3E1143R250	6.307	13.90				
					30	98.425	VW3E1143R300	7.542	16.63				
					40	131.234	VW3E1143R400	10.012	22.07				
					50	164.042	VW3E1143R500	12.482	27.52				
					Cables equipped with an M23 industrial connector (servo motor end) and a free end (servo drive end)	SH3/MH3	Lexium 52 Lexium 62	2.5 / 0.004	5	16.404	VW3E1144R050	1.712	3.77
									10	32.808	VW3E1144R100	3.292	7.26
	15	49.213	VW3E1144R150	4.872					10.74				
	20	65.617	VW3E1144R200	6.452					14.22				
	25	82.021	VW3E1144R250	8.032					17.71				
	30	98.425	VW3E1144R300	9.612					21.19				
	40	131.234	VW3E1144R400	12.772					28.16				
	50	164.042	VW3E1144R500	15.932					35.12				
	Cables equipped with an M40 industrial connector (servo motor end) and a free end (servo drive end)	SH3/MH3	Lexium 52 Lexium 62	2.5 / 0.004					5	16.404	VW3E1145R050	1.995	4.40
									10	32.808	VW3E1145R100	3.575	7.88
					15	49.213	VW3E1145R150	5.155	11.36				
					20	65.617	VW3E1145R200	6.735	14.85				
					25	82.021	VW3E1145R250	8.315	18.33				
					30	98.425	VW3E1145R300	9.895	21.81				
					40	131.234	VW3E1145R400	13.055	28.78				
					50	164.042	VW3E1145R500	16.215	35.75				
Cables equipped with an M40 industrial connector (servo motor end) and a free end (servo drive end)					SH3/MH3	Lexium 52 Lexium 62	4 / 0.006	5	16.404	VW3E1153R050	2.513	5.54	
								10	32.808	VW3E1153R100	5.000	11.02	
	15	49.213	VW3E1153R150	7.413				16.34					
	20	65.617	VW3E1153R200	9.870				21.76					
	25	82.021	VW3E1153R250	12.313				27.15					
	30	98.425	VW3E1153R300	14.763				32.55					
	40	131.234	VW3E1153R400	19.663				43.35					
	50	164.042	VW3E1153R500	24.563				54.15					
	Cables equipped with an M40 industrial connector (servo motor end) and a free end (servo drive end)	SH3/MH3	Lexium 52 Lexium 62	10 / 0.016				5	16.404	VW3E1154R050	4.832	10.65	
								10	32.808	VW3E1154R100	9.232	20.35	
15					49.213	VW3E1154R150	13.632	30.05					
20					65.617	VW3E1154R200	18.032	39.75					
25					82.021	VW3E1154R250	22.432	49.45					
30					98.425	VW3E1154R300	26.832	59.15					
40					131.234	VW3E1154R400	35.632	78.56					
50					164.042	VW3E1154R500	44.432	97.96					
Control cordsets (feedback) 					SinCos Hiperface® encoder cables equipped with an M23 industrial connector (servo motor end) and an RJ45 connector with 8+2 contacts (servo drive end)	SH3/MH3	Lexium 52 – Lexium 62	–	5	16.404	VW3E2094R050	0.415	0.91
									10	32.808	VW3E2094R100	0.745	1.64
	15	49.213	VW3E2094R150	1.075					2.37				
	20	65.617	VW3E2094R200	1.405					3.10				
	25	82.021	VW3E2094R250	1.735					3.83				
	30	98.425	VW3E2094R300	2.065					4.55				
	40	131.234	VW3E2094R400	2.725					6.01				
	50	164.042	VW3E2094R500	3.385					7.46				

PacDrive 3 automation solution

Lexium SH3/MH3/SHS servo motors

Lexium SH3 / MH3 servo motors – Connection elements, IP 67 conformity kits

Connection description



- 1 M23/M40 connector
- 2 M23 signal connector
- 3 Y-Con + RJ45 connector

IP 67 conformity kits for Lexium MH3 servo motors

- This kit can be used to provide IP 67 degree of protection.
- It is mounted in place of the motor backplate.

Description	Use with	Reference	Weight kg/lb
IP 67 conformity kits (supplied as an option for Lexium MH3 servo motors)	■ MH3070●●	VW3M2301	0.100/ 0.220
	■ MH3100●●	VW3M2302	0.150/ 0.331
	■ MH3140●●	VW3M2303	0.300/ 0.661
	■ MH3190●●	(1)	0.003/ 0.007

(1) IP 67 conformity kit sold by Festo AG under reference QSML-B-M3-4-20.

PFC080822



VW3M230●

PacDrive 3 automation solution

Lexium SH3/MH3/SHS servo motors

Lexium SHS stainless steel servo motors



FCE200519B200



FCE200520B200



FCE200524B200



FCE200521B200



FCE200525B200



FCE200522B200



FCE200523B200

Presentation

Lexium SHS servo motors are stainless steel servo motors that are based on Lexium SH3 servo motors and designed for a high-torque output with relatively low current consumption in a stainless steel jacket.

Lexium SHS stainless steel servo motors and hybrid cable are the ideal choice to meet the requirements for dynamics, precision, and surroundings in the food and pharma industries.

Seven different types of Lexium SHS servo motors are available, in the following variants:

- 3 flange sizes: 055, 070, 100 mm
- Peak Torque: 3.2 to 28.3 Nm (2.36 to 20.87 ft-lbf)
- Available speed: up to 6000 rpm
- Equipped with multi-turn encoder and optionally with holding brake
- Laser marking of identification label

One cable solution

The range of stainless steel motors has been designed with a new type of hybrid cable to connect the drive to the motor based on a single-cable connection. This reduces the effort required for cabling and cleaning.

> Applications

Lexium SHS servo motors are suitable for machines used in the food industry, which may have special requirements for materials, surfaces, soiled edges, and cleaning all parts of the machine.

> General functions

Lexium SHS servo motors offer the following features:

- Overload protection with an integrated temperature sensor (external evaluation required)
- Low moment of inertia
- Excellent dynamics
- Stainless steel surface: fewer “soiled edges”, easy cleaning (CIP), hygienic design
- Certification to CE, UL, and CSA
- Construction in accordance with EHEDG Guidelines
- Stainless steel motors are integrated in ECAM Database
- Degree of protection: IP 67 and IP 69k (shaft and housing)
- High overload capability
- Easy commissioning through electronic type plate and low maintenance
- Lexium SHS motors can be operated with Lexium 62, Lexium 52, and partly for Lexium 32. Suitable cables are available for every drive. Lexium SHS motors can also be operated with PacDrive M.

> Holding brake

The Lexium SHS servo motors (FCE200521B200, FCE200522B200 and FCE200523B200) are equipped with a failsafe electro-magnetic holding brake.

⚠ Do not use the holding brake as a dynamic brake for deceleration, as this will quickly damage the brake.

> Integrated encoder

Lexium SHS servo motors are fitted with a SinCos Hiperface® high-resolution multi-turn (131,072 points/turn x 4096 turns) encoder providing angular precision of the shaft position, accurate to less than ± 1.3 arc minute (0.021°). This performs the following functions:

- Gives the absolute motor position to allow flow synchronization
- Measures the position information for the servo drive controller
- Sends data from the servo motor to the servo drive, which allows automatic identification of the motor when the servo drive starts

Lexium SHS servo motor – references													
Technical datas													
Nominal servo motor output power		Continuous stall torque		Rated torque		Peak stall torque		Rated speed		Rotor moment of inertia (without holding brake)	Reference	Weight	
Pn		M0		Mn		Mmax		Nn Nmax		Jm			
kW	/hp	Nm	/ft-lbf	Nm	/ft-lbf	Nm	/ft-lbf	rpm	rpm	kgcm ²		kg	lb
0.3	0.4	0.9	0.66	0.79	0.58	3.2	2.4	4000	9000	0.13	FCE200519B200 (1)	2.200	4.85
0.9	1.2	2.0	1.47	1.4	1.03	7.6	5.6	6000	8000	0.41	FCE200520B200 (1)	6.400	14.11
1.0	1.3	2.5	1.84	1.55	1.14	10.3	7.6	6000	8000	0.81	FCE200521B200 (2)	7.200	18.87
0.8	1.1	4.65	3.42	3.85	2.83	18.3	13.5	2000	8000	2.93	FCE200522B200 (2)	8.800	19.40
1.3	1.7	6.75	4.97	3.0	2.21	28.3	20.9	4000	6000	3.22	FCE200523B200 (2)	10.000	22.05
1.0	1.3	2.5	1.84	1.55	1.14	10.3	7.6	6000	6000	0.58	FCE200524B200 (1)	7.100	15.65
0.8	1.1	4.65	3.42	4.0	2.95	18.3	13.5	2000	6000	2.31	FCE200525B200 (1)	8.700	19.18

(1) Motor without holding brake.
(2) Motor with holding brake.

Lexium SHS servo motor and Lexium 52 servo drive – combination					
Lexium 52 Servo drives	Servo motors	Motor			Servo drive
Reference	Reference	I _o	I _{nom}	I _{peak}	Standard
		A	A	A	A @ 8 kHz
LXM52DD12C41000	FCE200519B200	0.8	1.35	3.4	3
	FCE200520B200	2.9	2.6	11.8	3
	FCE200521B200	3.6	1.9	15.2	3
	FCE200522B200	2.2	2.3	9.0	3
LXM52DD18C41000	FCE200523B200	5.7	3	28.3	6
	FCE200524B200	3.6	3.8	15.2	6
	FCE200525B200	2.2	3.1	9.0	6

Lexium SHS servo motor and Lexium 62 servo drive – combination								
Lexium 62 Servo Drives	Servo motors	Motor			Servo drive			
Reference	Reference	I _o	I _{nom}	I _{peak}	Standard			
		A	A	A	A @ 4 kHz	A @ 8 kHz	A @ 16 kHz A	
LXM62DU60●21000	FCE200519B200	0.8	1.35	3.4 (1)	2	2	1.2	6
LXM62DD15●21000	FCE200520B200	2.9	2.6	11.8	5	5	1.2	15
LXM62DU60●21000	FCE200521B200	3.6	1.9	15.2 (1)+(2)	2	2	1.2	6
LXM62DD15●21000	FCE200522B200	2.2	2.3	9.0	5	5	3.5	15
LXM62DD15●21000	FCE200523B200	5.7	3	28.3 (1)	5	5	3.5	15
LXM62DD15●21000	FCE200524B200	3.6	3.8	15.2 (1)	5	5	3.5	15
LXM62DD15●21000	FCE200525B200	2.2	3.1	9.0	5	5	3.5	15

(1) Drive peak current lower than motor peak current
(2) Continuous torque limited by nominal drive current

Lexium SHS servo motors – dimensions

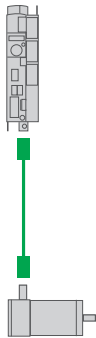
Dimensions (overall)

Servo motors	Flange		W x H x D (1)	
	mm	in.	mm	in.
FCE200519B200	58 x 58	2.3 x 2.3	58 x 64 x 225.1	2.3 x 2.5 x 8.9
FCE200520B200	71 x 71	2.8 x 2.8	71 x 112 x 216.7	2.8 x 4.4 x 8.5
FCE200524B200	71 x 71	2.8 x 2.8	71 x 112 x 284	2.8 x 4.4 x 11.2
FCE200521B200	71 x 71	2.8 x 2.8	71 x 112 x 284	2.8 x 4.4 x 11.2
FCE200525B200	100 x 100	3.94 x 3.94	100 x 138 x 270.7	3.94 x 5.4 x 10.7
FCE200522B200	100 x 100	3.94 x 3.94	100 x 138 x 270.7	3.94 x 5.4 x 10.7
FCE200523B200	100 x 100	3.94 x 3.94	100 x 138 x 306.7	3.94 x 5.4 x 12.1

(1) D = motor length (excluding shaft end).

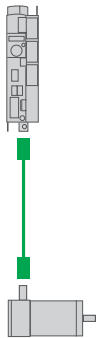
Connection elements

Designation	Composition	Connector		Length	Reference	Weight		
		Motor side	Servo drive side			m	ft	kg
Motor cable for Lexium SHS stainless steel servo motors and Lexium 62 servo drives								
Hybrid cables (shielded motor and encoder cable)	(4 x 1.5 mm ² / 0.002 in ²) + 2 x (2 x 0.75 mm ² / 0.001 in ²) + 2 x 0.34 mm ² / 0.0005 in ²) + 3 x (2 x 0.15 mm ² / 0.001 in ²)	Molex connectors	RJ45 (PD-3) connector for Encoder signal Wires for motor and holding brake connector	2	6.56	FCE307020A200	0.743	1.64
				2.5	8.20	FCE307025A200	0.909	2.0
				3	9.84	FCE307030A200	1.074	2.37
				3.5	11.48	FCE307035A200	1.240	2.73
				4	13.12	FCE307040A200	1.405	3.10
				4.5	14.76	FCE307045A200	1.571	3.46
				5	16.40	FCE307050A200	1.736	3.83
				5.5	18.04	FCE307055A200	1.902	4.19
				6	19.69	FCE307060A200	2.067	4.56
				6.5	21.33	FCE307065A200	2.233	4.92
7	22.97	FCE307070A200	2.398	5.29				
7.5	24.61	FCE307075A200	2.564	5.65				
8	26.25	FCE307080A200	2.729	6.02				
8.5	27.89	FCE307085A200	2.895	6.38				
9	29.53	FCE307090A200	3.060	6.75				
9.5	31.17	FCE307095A200	3.226	7.11				
10.0	32.81	FCE307100A200	3.391	7.48				



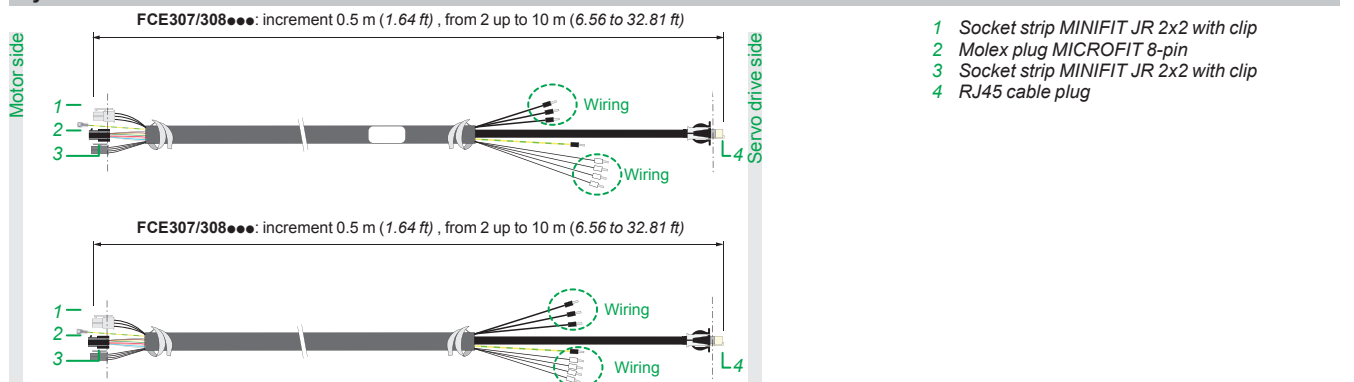
Motor cable for Lexium SHS stainless steel servo motors and Lexium 52 servo drives

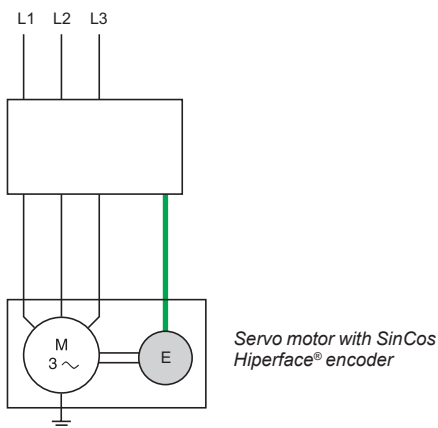
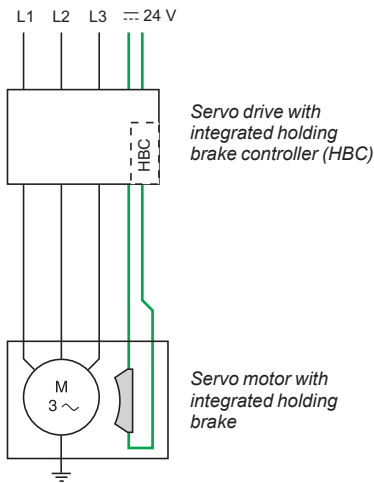
Hybrid cables (shielded motor and encoder cable)	(4 x 1.5 mm ² / 0.002 in ²) + 2 x (2 x 0.75 mm ² / 0.001 in ²) + 2 x 0.34 mm ² / 0.0005 in ²) + 3 x (2 x 0.15 mm ² / 0.001 in ²)	Molex connectors	RJ45 (PD-3) connector for Encoder signal Wires for motor and holding brake connector	2	6.56	FCE308020A200	0.743	1.64
				2.5	8.20	FCE308025A200	0.909	2.0
				3	9.84	FCE308030A200	1.074	2.37
				3.5	11.48	FCE308035A200	1.240	2.73
				4	13.12	FCE308040A200	1.405	3.10
				4.5	14.76	FCE308045A200	1.571	3.46
				5	16.40	FCE308050A200	1.736	3.83
				5.5	18.04	FCE308055A200	1.902	4.19
				6	19.69	FCE308060A200	2.067	4.56
				6.5	21.33	FCE308065A200	2.233	4.92
7	22.97	FCE308070A200	2.398	5.29				
7.5	24.61	FCE308075A200	2.564	5.65				
8	26.25	FCE308080A200	2.729	6.02				
8.5	27.89	FCE308085A200	2.895	6.38				
9	29.53	FCE308090A200	3.060	6.75				
9.5	31.17	FCE308095A200	3.226	7.11				
10.0	32.81	FCE308100A200	3.391	7.48				



Connection description

Hybrid cables





Holding Brake for Lexium servo motors

The holding brake integrated in the servo motor is an electromagnetic pressure spring brake that blocks the servo motor axis once the output current has been switched off.

The standard configuration of the servo drive integrates a holding brake controller, which amplifies the braking control signal to quickly deactivate the brake.

> Applications

In the event of an emergency, such as a power outage or operation of an emergency stop button, the drive is immobilized, thus significantly increasing safety.

The servo motor axis must also be blocked in the event of torque overload, such as vertical axis movement.

Encoder for Lexium servo motors

The standard measurement device is the SinCos Hiperface® single-turn or multi-turn encoder integrated in Lexium servo motors.

Depending on the model, single-turn and multi-turn SinCos encoders are available with medium resolution and capacitive sensing, or high resolution and optical sensing.

To select the type of SinCos Hiperface® encoder integrated in the Lexium servo motors (single-turn or multi-turn), see Servo motor references.

For additional information on integrated encoder characteristics, Please contact your local sales office.

> Applications

This interface can be used for:

- Automatic identification of Lexium servo motor data by the servo drive
- Automatic initialization of the servo drive's control loops, to simplify installation of the motion control device

Planetary gearboxes

GBX and GBY optional planetary gearboxes for Lexium SH3 and MH3 servo motors: Please refer to our catalog "GBX and GBY Planetary gearboxes".

Schneider electric can supply stainless steel gearboxes for Lexium SHS servo motors: Please contact your local sales office.

F			
FCE200519B200	13	VW3E1153R150	10
FCE200520B200	13	VW3E1153R200	10
FCE200521B200	13	VW3E1153R250	10
FCE200522B200	13	VW3E1153R300	10
FCE200523B200	13	VW3E1153R400	10
FCE200524B200	13	VW3E1153R500	10
FCE200525B200	13	VW3E1154R050	10
FCE307020A200	14	VW3E1154R100	10
FCE307025A200	14	VW3E1154R150	10
FCE307030A200	14	VW3E1154R200	10
FCE307035A200	14	VW3E1154R250	10
FCE307040A200	14	VW3E1154R300	10
FCE307045A200	14	VW3E1154R400	10
FCE307050A200	14	VW3E1154R500	10
FCE307055A200	14	VW3E2094R050	10
FCE307060A200	14	VW3E2094R100	10
FCE307065A200	14	VW3E2094R150	10
FCE307070A200	14	VW3E2094R200	10
FCE307075A200	14	VW3E2094R250	10
FCE307080A200	14	VW3E2094R300	10
FCE307085A200	14	VW3E2094R400	10
FCE307090A200	14	VW3E2094R500	10
FCE307095A200	14	VW3M2301	11
FCE307100A200	14	VW3M2302	11
FCE308020A200	14	VW3M2303	11
FCE308025A200	14		
FCE308030A200	14		
FCE308035A200	14		
FCE308040A200	14		
FCE308045A200	14		
FCE308050A200	14		
FCE308055A200	14		
FCE308060A200	14		
FCE308065A200	14		
FCE308070A200	14		
FCE308075A200	14		
FCE308080A200	14		
FCE308085A200	14		
FCE308090A200	14		
FCE308095A200	14		
FCE308100A200	14		

V	
VW3E1143R050	10
VW3E1143R100	10
VW3E1143R150	10
VW3E1143R200	10
VW3E1143R250	10
VW3E1143R300	10
VW3E1143R400	10
VW3E1143R500	10
VW3E1144R050	10
VW3E1144R100	10
VW3E1144R150	10
VW3E1144R200	10
VW3E1144R250	10
VW3E1144R300	10
VW3E1144R400	10
VW3E1144R500	10
VW3E1145R050	10
VW3E1145R100	10
VW3E1145R150	10
VW3E1145R200	10
VW3E1145R250	10
VW3E1145R300	10
VW3E1145R400	10
VW3E1145R500	10
VW3E1153R050	10
VW3E1153R100	10

The Next Generation



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