

Lexium 32

Migration file

Lexium 05 to Lexium 32

Lexium 15 to Lexium 32



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The purpose of this document is to assist you when replacing a Lexium 05 or a Lexium 15 with a Lexium 32.

Scope of application:

You can use this manual to select the Lexium 32 and its various options and accessories on the basis of the hardware configuration used on the Lexium 05 and 15 when creating a new machine or during a factory modernization phase.

The Lexium 32 can replace all the functions of the Lexium 05. The gaps of Lexium 32 compared to Lexium 15 are also identified in this document.

However, the mechanics and the machine wiring must first be adapted and the compatibility of the control program checked.

This manual therefore sets out mounting, installation and cabling recommendations, instructions for migrating the associated servo motors and a list of known restrictions.

Prohibited applications:

Lexium 32 servo drives must not be used as maintenance parts when replacing a faulty Lexium 05 or a faulty Lexium 15. The adaptations described in this manual are required for reinstallation. To replace a faulty Lexium 05 or 15 servo drive, please contact your local Schneider Electric sales office.

Technical reference material:

To help you migrate your Lexium 05 / 15 installation to one using Lexium 32, we recommend that you refer to the following documents (these supplement the information given in this Migration Manual):

- The Lexium 32 catalog and manuals: For detailed characteristics of the Lexium 32 offer.
- The Lexium Sizer software: For sizing your servo motor correctly.
- Installation, Programming and Communication modules Setup Manuals: For preparing all the groundwork when setting up your machine.

All these documents are available on schneider-electric.com.

Setup procedure

Lexium ●5 => Lexium 32 migration

1. Identification of the existing installation:
 - a. Lexium 05 drive / SER/BSH/BRH servo motor
 - b. Lexium 15 drive / BDH/BSH servo motor
 - c. Lexium 15 drive / third-party motor combinationsMake an inventory of your Lexium 17D installation.
Make an inventory of your servo motor installation.
2. Selecting the corresponding Lexium 32/BMH and Lexium 32/BSH combination
 - a. Determine the corresponding drive catalog number.
 - b. Determine the corresponding motor catalog number.
3. Mounting
 - a. Mount the drive in accordance with the instructions in this document.
 - b. Install any internal and external options.
4. Wiring
 - a. Connect the motor in accordance with the instructions in this document.
 - b. Connect the feedback cable.
 - c. Connect the control.
 - d. Connect the line supply, after making sure that the power is off.
5. Configuration
 - a. Servo drive
 - b. Communication modules
 - c. 2nd Encoder modules
 - d. Safety module

Steps 3 and 4 must be performed with the power off

Identification of the existing installation

Lexium 05/15 servo drive hardware identification

Before selecting the Lexium 32, the hardware configuration of the existing Lexium 05 installation needs to be determined carefully.

1. Measure the line voltage and indicate the type of power supply:

Line voltage: _____ V Single-phase/Three-phase

2. Note down the servo drive catalog number, which appears on the Lexium 05 nameplate:

LXM05 _____

LXM15 _____

3. Note down the catalog number of any EMC filters connected to the servo drive:

VW3 A3 140 _____ (Lexium 05)

VW3 M4 10 _____ (Lexium 15 HP)

4. Note down the catalog number of any line chokes connected to the servo drive:

VZ1 L0 _____ UM _____ (Lexium 05)

VW3 A4 55 _____ (Lexium 05)

VW3 M4 30 _____ (Lexium 15 HP)

5. Note down the catalog number of any braking resistors connected to the servo drive:

VW3 A7 60 _____ R _____ (Lexium 05 and Lexium 15)

VW3 A7 70 _____ (Lexium 15)

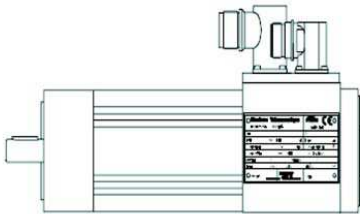
6. Note down the catalog number of any option cards installed in the Lexium 15; this can be found on the label attached to the card:

7. Make sure you have the diagrams for the existing installation.

BDH / BSH / BRH servo motors identification

Before selecting the BMH or BSH servo motor, the hardware configuration of the existing motor (B●H) installation needs to be determined carefully.

1. Measure the line voltage and indicate the type of power supply:
Line voltage: _____ V Single-phase/Three-phase



2. Note down the servo motor catalog number, which appears on the B●H nameplate:

B●H _____

Determine if the servo motor is equipped with:

A multiturn encoder: B●H ●●●●●● ●2 ●●●

☐ Multiturn

A brake: B●H ●●●●●● ●● F●●

☐ Brake

A keyed shaft: B●H 1●●●●●● ●● ●●● or
B●H 3●●●●●● ●● ●●●

☐ Keyed shaft

Rotatable connectors B●H ●●●●●● ●● ●2●

☐ Rotatable connectors

A high IP protection B●H 2●●●●●● ●● ●●● or
B●H 3●●●●●● ●● ●●●

☐ IP56 (BRH)
or IP65 (BSH & BDH)

3. Determine the length of the power connection and encoder cables used in your installation:
VW3 M● ●●● R_____, this value is the length of the cable in centimeter.
4. Determine the gear ratio of your gearbox:
Gear ratio: ____: 1
5. Make sure you have the diagrams for the existing installation

SER servo motor identification

Before selecting the BMH or BSH servo motor, the hardware configuration of the old SER installation needs to be determined carefully.

1. Measure the line voltage and indicate the type of power supply:

Line voltage: _____ V Single-phase/Three-phase

2. Note down the servo motor catalog number, which appears on the SER nameplate:
SER _____

Determine if the servo motor is equipped with:

A multiturn encoder: SER ●●● ●●●●MO ●●●

☐ Multiturn

A brake: SER ●●● ●●●●● 1●●

☐ Brake

SER ●●● ●●●●● 2●●

All SER motors are equipped with untapped shaft ends

A high IP protection: SER ●●● ●●●●● B●●

☐ IP56

SER ●●● ●●●●● 2●●

A gearbox: SER ●●● ●●●●● ●●3

☐ 3:1 ratio

SER ●●● ●●●●● ●●5

☐ 5:1 ratio

SER ●●● ●●●●● ●●8

☐ 8:1 ratio

3. Determine the length of the power connection and encoder cables used in your installation:
LXA C● A●● _____1, this value is the length of the cable in centimeter.

4. Make sure you have the diagrams for the existing installation.

Third-party servo motor hardware identification

Note: This section deals with migration where your motor is not a servo motor from the Schneider Electric range. It provides guidelines for selecting the BSH or BMH motor model that would be a suitable replacement for your motor. It is not a contractual guarantee of compatibility. Contact your local Schneider Electric sales office to ascertain if your selection is compatible. Before selecting the BMH or BSH servo motor, the hardware configuration of the old servo motor needs to be determined carefully. The information requested in this section can usually be found on the motor nameplate or in the manufacturer's technical documentation.

1. Measure the line voltage and indicate the type of power supply:

Line voltage: _____ V Single-phase/Three-phase

2. Indicate the stall torque (or the thermal torque at zero speed) of the servo motor:

M0: _____ Nm

3. Indicate the maximum torque of the servo motor:

Mmax: _____ Nm

4. Indicate the nominal torque of the servo motor:

Mn: _____ Nm

5. Indicate the nominal speed of the servo motor:

Nn: _____ rpm

6. Determine if the servo motor is equipped with:

A multiturn encoder:

☐ Multiturn

A brake:

☐ Brake

A keyed shaft:

☐ Keyed shaft

Rotatable connectors:

☐ Rotatable connectors

A high IP protection:

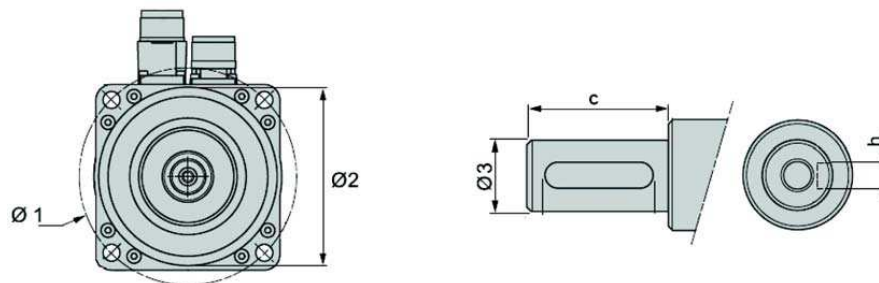
☐ IP65

☐ IP67

A gearbox:

☐ Gear ratio: _____ :1

7. Determine the mechanical characteristics of your servo motor:



Indicate the following measurements:

Positioning diameter of fixing holes ($\varnothing 1$): _____ mm

Centering diameter (Ø2): _____mm

Shaft diameter (Ø3): _____mm

Shaft length (c): _____mm

Key width (h for shafts equipped with key): _____mm

Note: This list of data will allow you to check if the BMH/BSH offer is mechanically suited to your machine or if the mechanics of your axis needs to be adapted.

8. Make sure you have the diagrams for the existing installation.

Determining catalog numbers

Lexium 05 to Lexium 32

Selecting the Lexium 32 catalog number

Required information (refer to page 5): Line voltage, Lexium 05/15 catalog number.

Important notes

LXM 05's Catalog Nominal power is measured with a switching frequency of 4 Khz. The default value of Lexium 32 is 8 Khz.

Lexium 05A to Lexium 32

Lexium 05A was previously a flexible drive. Consequently depending on the applications, the preferred Lexium 32 could be a Compact, an Advanced or a Modular drive:

- PTI, Master Slave and analog control, preferred solution Lexium 32 Compact
- Synchronized movement (architecture with Motion Controller) and I/Os managed by the PLC, preferred solution Lexium 32 Advanced
- Mix of Electronic gear and CANopen, Motion Sequence, 2 capture inputs, several I/Os managed in the drive, preferred solution Lexium 32 Modular with CANopen communication module VW3 A3 608 (2 * RJ45) or VW3 A3 618(1 way SUB-D 9)

In the tables below, replace “●” by “C” if you need a compact drive, “A” if you need an “Advanced” drive, “M” if you need a Modular drive

- Single-phase supply voltage: 100...120 V a 50/60 Hz, with integrated EMC filter

Reference Lexium 05A	Output Current (A rms at 8 KHz)		Reference Lexium 32
	Continuous	Peak	
LXM05AD10F1	3.2	6	LXM32●U18M2
LXM05AD17F1	7	11	LXM32●D30M2
LXM05AD28F1	13	20	LXM32●D30M2 ¹

- Single-phase supply voltage: 200...240 V a 50/60 Hz, with integrated EMC filter

Reference Lexium 05A	Output Current (A rms at 8 KHz)		Reference Lexium 32
	Continuous	Peak	
LXM05AD10M2	3.2	6	LXM32●U90M2 ²
LXM05AD17M2	7	11	LXM32●D18M2 ³
LXM05AD28M2	13	20	LXM32●D30M2 ⁴

- Three-phase supply voltage: 380...480 V a 50/60 Hz, with integrated EMC filter

Reference Lexium 05A	Output Current (A rms at 8 KHz)		Reference Lexium 32
	Continuous	Peak	
LXM05AD14N4	5	7.5	LXM32●D18N4 ⁵
LXM05AD22N4	7	14	LXM32●D18N4 ⁶
LXM05AD34N4	11	18	LXM32●D30N4 ⁷
LXM05AD57N4	20	30	LXM32●D72N4

¹ Continuous current limited to 10A, Peak limited to 15A (1s)

² Continuous current limited to 3A, LXM32●U45M2 could be sufficient (new lowest caliber)

³ Continuous current limited to 6A

⁴ Continuous current limited to 10A

⁵ LXM32●D12N4 or LXM32●U60N4 could be sufficient (new lowest calibers)

⁶ Continuous current limited to 6A

⁷ Continuous current limited to 10A

Lexium 05B to Lexium 32

Lexium 32 integrates Modular drives which allow you to connect different communication modules. Consequently, to replace a Lexium 05B, you have to order the right drive depending on the current needed and order the PROFIBUS DP module (VW3A3607).

- Single-phase supply voltage: 100...120 V a 50/60 Hz, with integrated EMC filter

Reference Lexium 05B	Output Current (A rms at 8 KHz)		Reference Lexium 32	Reference module
	Continuous	Peak		
LXM05BD10F1	3.2	6	LXM32MD18M2	VW3A3607
LXM05BD17F1	7	11	LXM32MD30M2	
LXM05BD28F1	13	20	LXM32MD30M2 ¹	

- Single-phase supply voltage: 200...240 V a 50/60 Hz, with integrated EMC filter

Reference Lexium 05B	Output Current (A rms at 8 KHz)		Reference Lexium 32	Reference module
	Continuous	Peak		
LXM05BD10M2	3.2	6	LXM32•U90M2 ²	VW3A3607
LXM05BD17M2	7	11	LXM32•D18M2 ³	
LXM05BD28M2	13	20	LXM32•D30M2 ⁴	

- Three-phase supply voltage: 380...480 V a 50/60 Hz, with integrated EMC filter

Reference Lexium 05B	Output Current (A rms at 8 KHz)		Reference Lexium 32	Reference module
	Continuous	Peak		
LXM05BD14N4	5	7.5	LXM32•D18N4 ⁵	VW3A3607
LXM05BD22N4	7	14	LXM32•D18N4 ⁶	
LXM05BD34N4	11	18	LXM32•D30N4 ⁷	
LXM05BD57N4	20	30	LXM32•D72N4	

¹ Continuous current limited to 10A, Peak limited to 15A (1s)

² Continuous current limited to 3A, LXM32MU45M2 could be sufficient (new lowest caliber)

³ Continuous current limited to 6A

⁴ Continuous current limited to 10A

⁵ LXM32MD12N4 or LXM32MU60N4 could be sufficient (new lowest calibers)

⁶ Continuous current limited to 6A

⁷ Continuous current limited to 10A

Lexium 05C to Lexium 32

Context information: no communication (only Modbus), no Homing. Dedicated architectures: I/O control (analog, pulse train ...)

- Single-phase supply voltage: 200...240 V a 50/60 Hz, with integrated EMC filter

Reference Lexium 05C	Output Current (A rms at 8 KHz)		Reference Lexium 32
	Continuous	Peak	
LXM05CU70M2	2.4	4.3	LXM32CU90M2 ¹
LXM05CD10M2	3.2	6	LXM32CU90M2 ²
LXM05CD17M2	7	11	LXM32CD18M2 ³
LXM05CD28M2	13	20	LXM32CD30M2 ⁴

- Three-phase supply voltage: 380...480 V a 50/60 Hz, with integrated EMC filter

Reference Lexium 05C	Output Current (A rms at 8 KHz)		Reference Lexium 32
	Continuous	Peak	
LXM05CD14N4	5	7.5	LXM32CD18N4 ⁵
LXM05CD22N4	7	14	LXM32CD18N4 ⁶
LXM05CD34N4	11	18	LXM32CD30N4 ⁷
LXM05CD57N4	20	30	LXM32CD72N4

¹ LXM32CU45M2 could be sufficient (new lowest caliber)

² Continuous current limited to 3A

³ Continuous current limited to 6A

⁴ Continuous current limited to 10A

⁵ LXM32CD12N4 or LXM32CU60N4 could be sufficient (new lowest calibers)

⁶ Continuous current limited to 6A

⁷ Continuous current limited to 10A

Selecting the Accessories catalog number

Braking resistors

Required information (refer to page 5 and to page 10 to 12): Braking resistor catalog number, Lexium 32 catalog number

Braking resistor references used with Lexium 32 are the same as the ones used with Lexium 05, plus two references used with other Lexium or other Altivar drives.

However, before connecting the braking resistor used with the Lexium 05 to the Lexium 32, please check that it fits using the two tables below (resistor range):

1. Characteristics of the braking resistors



VW3 A7 60 R00

Value	Continuous power PPr	Peak energy EPk				Length of connection cable	Reference	Weight
		115 V	230 V	380 V	480 V			
Ω	W	Ws	Ws	Ws	Ws	m		kg
10	400	18,800	13,300	7300	7700	0.75	VW3 A7 601 R07	1.420
						2	VW3 A7 601 R20	1.470
						3	VW3 A7 601 R30	1.620
	1000	36,500	36,500	22,500	22,500	—	VW3 A7 705	11.000
15	1000	43,100	43,100	26,500	26,500	—	VW3 A7 704	11.000
27	100	4200	3800	1900	1700	0.75	VW3 A7 602 R07	0.630
						2	VW3 A7 602 R20	0.780
						3	VW3 A7 602 R30	0.900
	200	9700	7400	4900	4300	0.75	VW3 A7 603 R07	0.930
						2	VW3 A7 603 R20	1.080
						3	VW3 A7 603 R30	1.200
	400	25,500	18,100	11,400	10,500	0.75	VW3 A7 604 R07	1.420
						2	VW3 A7 604 R20	1.470
						3	VW3 A7 604 R30	1.620
	72	100	5500	3700	2500	0.75	VW3 A7 605 R07	0.620
						2	VW3 A7 605 R20	0.750
						3	VW3 A7 605 R30	0.850
		200	14,600	9600	6600	0.75	VW3 A7 606 R07	0.930
						2	VW3 A7 606 R20	1.080
						3	VW3 A7 606 R30	1.200
	400	36,600	24,700	16,200	15,500	0.75	VW3 A7 607 R07	1.420
						2	VW3 A7 607 R20	1.470
						3	VW3 A7 607 R30	1.620
100	100	4400	4400	2900	2900	0.75	VW3 A7 608 R07	0.410
						2	VW3 A7 608 R20	0.560
						3	VW3 A7 608 R30	0.760

Note: The total continuous power dissipated in the external braking resistor(s) must be less than or equal to the nominal power of the Lexium 32 servo drive

2. Characteristics and compatibility of Lexium 32 servo drives

Characteristics								
Braking resistors used with LXM 32●●●●M2 servo drives with 115 V ~ power supply								
Type of servo drive			LXM 32●U45M2	LXM 32●U90M2	LXM 32●D18M2	LXM 32●D30M2		
Number of phases			Single-phase					
Load threshold			V ∴	430				
Energy absorption of the internal capacitors			Edrive Joules (Ws)	30	60	89	119	
Internal resistor	Resistance	Ω	94	47	20	10		
	Continuous power	PPr W	10	20	40	60		
	Peak energy	EPk Joules (Ws)	82	166	330	550		
External resistor	Minimum resistance	Ω	68	36	20	12		
	Maximum resistance	Ω	110	55	27	16		
Braking resistors used with LXM 32●●●●M2 servo drives with 230 V ~ power supply								
Type of servo drive			LXM 32●U45M2	LXM 32●U90M2	LXM 32●D18M2	LXM 32●D30M2		
Number of phases			Single-phase					
Load threshold			V ∴	430				
Energy absorption of the internal capacitors			Edrive Joules (Ws)	9	18	26	35	
Internal resistor	Resistance	Ω	94	47	20	10		
	Continuous power	PPr W	10	20	40	60		
	Peak energy	EPk Joules (Ws)	82	166	330	550		
External resistor	Minimum resistance	Ω	68	36	20	12		
	Maximum resistance	Ω	110	55	27	16		
Braking resistors used with LXM 32●●●●N4 servo drives with 230 V ~ power supply								
Type of servo drive			LXM 32●U60N4	LXM 32●D12N4	LXM 32●D18N4	LXM 32●D30N4	LXM 32●D72N4	
Number of phases			Three-phase					
Load threshold			V ∴	780				
Energy absorption of the internal capacitors			Edrive Joules (Ws)	14	25	50	73	145
Internal resistor	Resistance	Ω	132	60	30	30	10	
	Continuous power	PPr W	20	40	60	100	150	
	Peak energy	EPk Joules (Ws)	200	400	600	1000	2400	
External resistor	Minimum resistance	Ω	100	47	33	15	8	
	Maximum resistance	Ω	145	73	50	30	12	
Braking resistors used with LXM 32●●●●N4 servo drives with 480 V ~ power supply								
Type of servo drive			LXM 32●U60N4	LXM 32●D12N4	LXM 32●D18N4	LXM 32●D30N4	LXM 32●D72N4	
Number of phases			Three-phase					
Load threshold			V ∴	780				
Energy absorption of the internal capacitors			Edrive Joules (Ws)	3	5	10	14	28
Internal resistor	Resistance	Ω	132	60	30	30	10	
	Continuous power	PPr W	20	40	60	100	150	
	Peak energy	EPk Joules (Ws)	200	400	600	1000	2400	
External resistor	Minimum resistance	Ω	100	47	33	15	8	
	Maximum resistance	Ω	145	73	50	30	12	

EMC input filters

Required information (page 10 to 12): Lexium 32 catalog number

IMPORTANT note

The first table takes into account the preferred Lexium 32 replacements recommended in page 10 to 12.

If you didn't select the preferred solution, please refer to the second table which gives the complete compatibility between Lexium 32 and EMC filter.

Note that the Lexium 32 EMC filters are the same filter as Lexium 05 with a mechanical adaptation for side by side mounting. These references are also used with Altivar 32.

1. EMC filters for preferred Lexium 32 (page 10 to 12)

Lexium 05 reference	Lexium 05 EMC filter	Preferred Lexium 32	Lexium 32 EMC filter
Single-phase supply voltage			
LXM05CU70M2	VW3 A31401	LXM32CU90M2	VW3A4420
LXM05•D10F1	VW3 A31401	LXM32•U18M2	VW3A4421
LXM05•D10M2	VW3 A31401	LXM32•U90M2	VW3A4420
LXM05•D17F1	VW3 A31403	LXM32•D30M2	VW3A4421
LXM05•D17M2	VW3 A31403	LXM32•D18M2	VW3A4421
LXM05•D28F1	VW3 A31403	LXM32•D30M2	VW3A4421
LXM05•D28M2	VW3 A31403	LXM32•D30M2	VW3A4421
Three-phase supply voltage			
LXM 05•D14N4	VW3 A31404	LXM32•D18N4	VW3A4422
LXM 05•D22N4	VW3 A31406	LXM32•D18N4	VW3A4422
LXM 05•D34N4	VW3 A31406	LXM32•D30N4	VW3A4422
LXM 05•D57N4	VW3 A31407	LXM32•D57N4	VW3A4423

2. EMC filters for all Lexium 32

For servo drive	Maximum servo motor cable length conforming to		Reference	Weight
	EN 55011 class A Gr1	EN 55011 class A Gr2		
	IEC/EN 61800-3 category C2 in environment 1	IEC/EN 61800-3 category C3 in environment 2		
	Switching frequency 8 kHz	Switching frequency 8 kHz		
	m	m		kg
Single-phase supply voltage				
LXM 32•U45M2	50	100	VW3 A4 420	0.600
LXM 32•U90M2				
LXM 32•D18M2	50	100	VW3 A4 421	0.775
LXM 32•D30M2				
Three-phase supply voltage				
LXM 32•U60N4	50	100	VW3 A4 422	0.900
LXM 32•D12N4				
LXM 32•D18N4				
LXM 32•D30N4				
LXM 32•D72N4	50	100	VW3 A4 423	1.350

Line Chokes

Required information (page 10 to 12): Lexium 32 catalog number

IMPORTANT

The first table takes into account the preferred Lexium 32 replacements recommended in page 10 to 12.

If you didn't select the preferred solution, please refer to the second table which gives the complete compatibility between Lexium 32 and EMC filter.

1. Line chokes for preferred Lexium 32 (page 10 to 12)

Lexium 05 reference	Lexium 05 Line choke	Preferred Lexium 32	Lexium 32 Line choke
Single-phase supply voltage: 100...120 V 50/60 Hz			
LXM 05•D10F1	VZ1 L007UM50	LXM32•U18M2	VZ1 L018UM20
LXM 05•D17F1	VZ1 L018UM20	LXM32•D30M2	VZ1 L018UM20
LXM 05•D28F1	VZ1 L018UM20	LXM32•D30M2	VZ1 L018UM20
Single-phase supply voltage: 200...240 V 50/60 Hz			
LXM 05CU70M2	VZ1 L007UM50	LXM32•U90M2	VZ1 L018UM20
LXM 05•D10M2	VZ1 L007UM50	LXM32•U90M2	VZ1 L018UM20
LXM 05•D17M2	VZ1 L018UM20	LXM32•D18M2	VZ1 L018UM20
LXM 05•D28M2	VZ1 L018UM20	LXM32•D30M2	VZ1 L018UM20
Three-phase supply voltage: 380...480 V 50/60 Hz			
LXM 05•D14N4	VW3 A4 551	LXM32•D18N4	VW3 A4 554
LXM 05•D22N4	VW3 A4 551	LXM32•D18N4	VW3 A4 554
LXM 05•D34N4	VW3 A4 552	LXM32•D30N4	VW3 A4 554
LXM 05•D57N4	VW3 A4 552	LXM32•D72N4	VW3 A4 554

2. Line chokes for all Lexium 32



Line chokes						
For servo drive	Line current and THD				Reference	Weight
	Without choke		With choke			
	A	%	A	%		
Single-phase supply voltage: 115 V ~ 50/60 Hz						
LXM 32●U45M2	2.9	173	2.6	85	VZ1 L007UM50	0.880
LXM 32●U90M2	5.4	159	5.2	90	VZ1 L018UM20	1.990
LXM 32●D18M2	8.5	147	9.9	74		
LXM 32●D30M2	12.9	135	9.9	72		
Single-phase supply voltage: 230 V ~ 50/60 Hz						
LXM 32●U45M2	2.9	181	3.4	100	VZ1 L007UM50	0.880
LXM 32●U90M2	4.5	166	6.3	107	VZ1 L018UM20	1.990
LXM 32●D18M2	8.4	148	10.6	93		
LXM 32●D30M2	12.7	135	14.1	86		
Three-phase supply voltage: 380 V ~ 50/60 Hz						
LXM 32●U60N4	1.4	187	1.9	106	VW3 A4 553	3.500
LXM 32●D12N4	3	174	3.5	88		
LXM 32●D18N4	5.5	159	7.2	88	VW3 A4 554	6.000
LXM 32●D30N4	8.7	146	11.6	74		
LXM 32●D72N4	18.1	124	23.5	43		
Three-phase supply voltage: 480 V ~ 50/60 Hz						
LXM 32●U60N4	1.2	201	1.6	116	VW3 A4 553	3.500
LXM 32●D12N4	2.4	182	2.9	98		
LXM 32●D18N4	4.5	165	6	98	VW3 A4 554	6.000
LXM 32●D30N4	7	152	9.6	85		
LXM 32●D72N4	14.6	129	19.5	55		

Communication

1. Lexium 05A CANopen/CANmotion replaced by Lexium 32A or Lexium 32M + VW3A3608 (2 * RJ 45)

IMPORTANT

Due to cost optimization, Lexium 32 doesn't have an integrated line terminator; consequently you have to order it separately. Reference: TCSCAR013M120 (RJ45 connector)

Due to its integrated daisy chaining function (Lexium 32A or Lexium 32M + VW3A3608), Lexium 32 doesn't need CANopen junction box anymore, cabling is then simplified.

Accessories

Description	LXM05A●●●●●	LXM32A●●●●● or LXM32M●●●●● + VW3A3608
Line terminator RJ 45	-	TCSCAR013M120
CANopen IP 20 junction box 2 * R 45	VW3CANTAP2	-

Cord sets and cables

Use			
From	to		Comments
	LXM05A●●●●●	LXM32A●●●●● or LXM32M●●●●● + VW3A3608	
VW3CANTAP2 junction box	VW3CANCARR03 VW3CANCARR1 (connector CN4)	VW3CANCARR03 VW3CANCARR1 (connector CN4 or CN5, VW3A3608 connector)	In theory, you can suppress the junction box
LXM05A●●●●●	(Daisy chaining) TSXCANC●50 or TSXCANC●100 or TSXCANC●300 (connector CN1)	VW3CANCARR03 (0,3 meter) VW3CANCARR1 (1 meter) (connector CN4 or CN5, VW3A3608 connector)	Using daisy chaining connector 2 * RJ 45
Twido	TSXCANKCDF●●●T + TSXCANC●50 or TSXCANC●100 or TSXCANC●300 (connector CN1)	VW3CANCARR03 (0,3 meter) VW3CANCARR1 (1 meter) (connector CN4 or CN5, VW3A3608 connector)	1 connector + 1 cable replaced by 1 cable with 1 sub-D connector and 1 RJ 45 connector
LMC20, LMC20A130 Lexium controllers	VW3M3805R010 (connector CN4)	VW3 M3 805R010 (1 meter) VW3 M3 805R030 (3 meter) (connector CN4 or CN5, VW3A3608 connector)	

2. Lexium 05A CANopen/CANmotion replaced by Lexium 32M + VW3A3618 (SUB-D 9)

IMPORTANT

Due to cost optimization, Lexium 32 doesn't have an integrated line terminator; consequently you have to order it separately. Reference: TCSCAR01NM120 (stripped wires)

Accessories

Description	LXM05A●●●●●	LXM32M●●●●● + VW3A3618
Line terminator	-	TCSCAR01NM120

Cord sets and cables

Use			
From	to		Comments
	LXM05A●●●	LXM32M●●●●● + VW3A3618	
LXM05A●●●●●	(Daisy chaining) TSXCANC●50 or TSXCANC●100 or TSXCANC●300 (connector CN1)	If you need daisy chaining, the best solution is to use Lexium 32A or LXM32M●●●●● + VW3A3608, see above	
Twido	TSXCANKCDF●●T● + TSXCANC●50 or TSXCANC●100 or TSXCANC●300 (connector CN1)	TSXCANCADD03 (0,3 meter) TSXCANCADD1 (1 meter) TSXCANCADD3 (3 meters) TSXCANCADD5 (5 meters) (VW3A3618 connector)	1 connector + 1 cable replaced by 1 cable with 1 SUB-D 9 connector at each end TSXCANCADD●● (CE marking, low smoke emission, halogen free, flame retardant). Also exist TSXCANCBDD●● (UL, CE marking, flame retardant)
LMC 20, LMC 20A130 Lexium controllers	VW3M3805R010 (connector CN4)	TSXCANCADD03 (0,3 meter) TSXCANCADD1 (1 meter) TSXCANCADD3 (3 meters) TSXCANCADD5 (5 meters) (VW3A3618 connector)	TSXCANCADD●● (CE marking, low smoke emission, halogen free, flame retardant). Also exist TSXCANCBDD●● (UL, CE marking, flame retardant)

3. Lexium 05B Profibus DP replaced by Lexium 32M + VW3A3607

Accessories, cord sets and cables

Description	LXM05B●●●●●	LXM32M●●●●● + VW3A3618
IP 20 SUD-D 9 connector with line termination switch	-	TSXCANKCDF180T (straight) TSXCANKCDF90T (angled) TSXCANKCDF90TP (angled with SUB-D 9 for connecting PC or diagnostic tool)
Profibus DP cable	TSXPBSCA100 TSXPBSCA400	TSXPBSCA100 TSXPBSCA400

4. Lexium 05A or Lexium 05C replaced by Lexium 32C or Lexium 32M

IMPORTANT

Due to its integrated daisy chaining function (Lexium 32C or Lexium 32M), Lexium 32 doesn't need signal splitter box anymore (RVA, VW3M3101), cabling is then simplified. USIC (VW3M3102) isn't needed anymore, RS 422, push pull or open collector signals can be connected directly.

Accessories

Description	LXM05●●●●●	LXM32C●●●●● or LXM32M●●●●●	Comments
RVA (reference value adapter)	VW3M3101	-	Daisy Chaining function embedded
USIC (RS 422 signal converter)	VW3M3102	-	RS 422, Push pull or open collector signals are accepted on Lexium 32

Cord sets and cables

Use			
From	to		Comments
	LXM05●●●●●	LXM32C●●●●● or LXM32M●●●●●	
External command or LXM05●●●●●	VW3M8201R05 VW3M8201R15 VW3M8201R30 VW3M8201R50	- - VW3M8223R30 -	
LXM05●●●●●	(Daisy chaining) VW3M8202R05 VW3M8202R15 VW3M8202R30 VW3M8202R50	VW3M8502R03 (0,3m) VW3M8502R15 (1,5m) - -	Daisy chaining embedded with double RJ 45 connectors in Lexium 32C and Lexium 32M

Remote graphic Display

LXM05●●●●●	LXM32●●●●●	Comments
VW3A31101 	VW3A1101¹ 	VW3A1101 is the same reference as the one used with Altivar range. The functionality is enhanced compared to VW3A3101 that only gave the same functions as the Lexium 05 HMI Also available: - Cord sets with 2 RJ45 VW3A1104R●●● (●●● length of wire see catalog) - Female/female RJ45 adaptor VW3A1105

Documentation

LXM05●●●●●	LXM32●●●●●	Comments
VW3M8703	VW3A8200	Motion and Drive documentation DVD Also available in www.schneider-electric.com

Configuration tool and accessories

Description	Lexium 05 reference	Lexium 32 reference
Cord set	VW3A8106, RS232 (SUB-D9) to RS485 (RJ 45)	VW3A8106 or TCSMCNAM3M002P (USB to RJ45)
Modbus-Bluetooth® adaptor	VW3A8114	VW3A8114
USB Bluetooth® adaptor for PC	VW3A8115	VW3A8115
Configuration Software	VW3A8104 PowerSuite BL CT or Lexium CT	SoMove ² Lexium CT ³

¹ Q1 2010

² Q1 2010

³ Temporary tool, will be completely replaced by SoMove

Lexium 15 to Lexium 32

Important notes

In Lexium 32 we don't offer motor chokes.

Due to market evolution Lexium 32 doesn't offer Modbus Plus or Fipio buses.

Modbus TCP, Ethercat and Sercos II communication modules for Lexium 32M will be released in Q3 2010.

Selecting the Lexium 32 catalog number

Required information (refer to page 5): Line voltage, Lexium 05/15 catalog number.

Important notes

Until now, you cannot use Lexium 32 with 220 VCA three phases supply. This feature will be released in Q1 2010.

There isn't any I/O extension module with Lexium 32 yet. Consequently, depending on the digital inputs and outputs you need and the range you choose (Compact, Advanced or Modular), check that the number is consistent.

- Single-phase supply voltage: 208...240 V 50/60 Hz, with integrated EMC filter

Reference Lexium 15 LP	Output Current (A rms at 8 KHz)		Reference Lexium 32
	Continuous	Peak (2 sec)	
LXM 15LU60N4	1.5	4.5	LXM 32●U45M2
LXM 15LD10N4	3	7.5	LXM 32●U90M2
LXM 15LD13M3	3	9	LXM 32●U90M2
LXM 15LD21M3	4	9	LXM 32●D18M2
LXM 15LD28M3	4	9	LXM 32●D18M2
LXM 15LD17N4	6	12	LXM 32●D18M2

Reference Lexium 15 MP	Output Current (A rms at 8 KHz)		Reference Lexium 32
	Continuous	Peak (5 sec)	
LXM 15MD28N4	10	20	LXM 32●D30M2
LXM 15MD40N4	14	28	Not available
LXM 15MD56N4	20	40	Not available

- Three-phase supply voltage: 380...480 V a 50/60 Hz, with integrated EMC filter

Reference Lexium 15 LP	Output Current (A rms at 8 KHz)		Reference Lexium 32
	Continuous	Peak (2 sec)	
LXM 15LU60N4	1.5	4.5	LXM 32●U60N4
LXM 15LD10N4	3	7.5	LXM 32●D12N4
LXM 15LD17N4	6	12	LXM 32●D18N4

Reference Lexium 15 MP	Output Current (A rms at 8 KHz)		Reference Lexium 32
	Continuous	Peak (5 sec)	
LXM 15MD28N4	10	20	LXM 32●D30N4
LXM 15MD40N4	14	28	LXM 32●D72N4
LXM 15MD56N4	20	40	LXM 32●D72N4

Reference Lexium 15 HP	Output Current (A rms at 8 KHz)		Reference Lexium 32
	Continuous	Peak (5 sec)	
LXM 15HC11N4X	40	80	Not available
LXM 15HC20N4X	70	140	Not available

Selecting the accessories catalog number

Braking resistors

Required information (refer to page 5 and to page 10 to 12): Braking resistor catalog number, Lexium 32 catalog number

Braking resistor references used with Lexium 32 are the same as the ones used with Lexium 15, (except VW3A7707).

However, before connecting the braking resistor used with the Lexium 15 to the Lexium 32, please check that it fits using the two tables below (resistor range):

1. Characteristics of the braking resistors



VW3 A7 60 R ● ●

Value Ω	Continuous power PPr W	Peak energy EPk				Length of connection cable m	Reference	Weight kg
		115 V Ws	230 V Ws	380 V Ws	480 V Ws			
10	400	18,800	13,300	7300	7700	0.75	VW3 A7 601 R07	1.420
						2	VW3 A7 601 R20	1.470
						3	VW3 A7 601 R30	1.620
	1000	36,500	36,500	22,500	22,500	—	VW3 A7 705	11.000
15	1000	43,100	43,100	26,500	26,500	—	VW3 A7 704	11.000
27	100	4200	3800	1900	1700	0.75	VW3 A7 602 R07	0.630
						2	VW3 A7 602 R20	0.780
						3	VW3 A7 602 R30	0.900
	200	9700	7400	4900	4300	0.75	VW3 A7 603 R07	0.930
						2	VW3 A7 603 R20	1.080
						3	VW3 A7 603 R30	1.200
	400	25,500	18,100	11,400	10,500	0.75	VW3 A7 604 R07	1.420
						2	VW3 A7 604 R20	1.470
						3	VW3 A7 604 R30	1.620
72	100	5500	3700	2500	2300	0.75	VW3 A7 605 R07	0.620
						2	VW3 A7 605 R20	0.750
						3	VW3 A7 605 R30	0.850
	200	14,600	9600	6600	6000	0.75	VW3 A7 606 R07	0.930
						2	VW3 A7 606 R20	1.080
						3	VW3 A7 606 R30	1.200
	400	36,600	24,700	16,200	15,500	0.75	VW3 A7 607 R07	1.420
						2	VW3 A7 607 R20	1.470
						3	VW3 A7 607 R30	1.620
100	100	4400	4400	2900	2900	0.75	VW3 A7 608 R07	0.410
						2	VW3 A7 608 R20	0.560
						3	VW3 A7 608 R30	0.760

Note: The total continuous power dissipated in the external braking resistor(s) must be less than or equal to the nominal power of the Lexium 32 servo drive

2. Characteristics and compatibility of Lexium 32 servo drives

Characteristics							
Braking resistors used with LXM 32●●●●M2 servo drives with 115 V ~ power supply							
Type of servo drive			LXM 32●U45M2	LXM 32●U90M2	LXM 32●D18M2	LXM 32●D30M2	
Number of phases			Single-phase				
Load threshold			V ∴	430			
Energy absorption of the internal capacitors			Edrive Joules (Ws)	30	60	89	119
Internal resistor	Resistance	Ω	94	47	20	10	
	Continuous power	PPr W	10	20	40	60	
	Peak energy	EPk Joules (Ws)	82	166	330	550	
External resistor	Minimum resistance	Ω	68	36	20	12	
	Maximum resistance	Ω	110	55	27	16	

Braking resistors used with LXM 32●●●●M2 servo drives with 230 V ~ power supply							
Type of servo drive			LXM 32●U45M2	LXM 32●U90M2	LXM 32●D18M2	LXM 32●D30M2	
Number of phases			Single-phase				
Load threshold			V ∴	430			
Energy absorption of the internal capacitors			Edrive Joules (Ws)	9	18	26	35
Internal resistor	Resistance	Ω	94	47	20	10	
	Continuous power	PPr W	10	20	40	60	
	Peak energy	EPk Joules (Ws)	82	166	330	550	
External resistor	Minimum resistance	Ω	68	36	20	12	
	Maximum resistance	Ω	110	55	27	16	

Braking resistors used with LXM 32●●●●N4 servo drives with 230 V ~ power supply								
Type of servo drive			LXM 32●U60N4	LXM 32●D12N4	LXM 32●D18N4	LXM 32●D30N4	LXM 32●D72N4	
Number of phases			Three-phase					
Load threshold			V ∴	780				
Energy absorption of the internal capacitors			Edrive Joules (Ws)	14	25	50	73	145
Internal resistor	Resistance	Ω	132	60	30	30	10	
	Continuous power	PPr W	20	40	60	100	150	
	Peak energy	EPk Joules (Ws)	200	400	600	1000	2400	
External resistor	Minimum resistance	Ω	100	47	33	15	8	
	Maximum resistance	Ω	145	73	50	30	12	

Braking resistors used with LXM 32●●●●N4 servo drives with 480 V ~ power supply								
Type of servo drive			LXM 32●U60N4	LXM 32●D12N4	LXM 32●D18N4	LXM 32●D30N4	LXM 32●D72N4	
Number of phases			Three-phase					
Load threshold			V ∴	780				
Energy absorption of the internal capacitors			Edrive Joules (Ws)	3	5	10	14	28
Internal resistor	Resistance	Ω	132	60	30	30	10	
	Continuous power	PPr W	20	40	60	100	150	
	Peak energy	EPk Joules (Ws)	200	400	600	1000	2400	
External resistor	Minimum resistance	Ω	100	47	33	15	8	
	Maximum resistance	Ω	145	73	50	30	12	

EMC input filters

Lexium 32 servo drives have integrated radio interference input filters to comply with IEC/EN 61800-3, ed. 2, category C3 in environment 2.

Consequently, it's not required to use an EMC filters when migrating from Lexium 15 to Lexium 32.

For servo drive	Maximum servo motor cable length conforming to
	EN 55011, class A, Gr2
	IEC/EN 61800-3, category C3 in environment 2
	Switching frequency: 8 kHz
	m
Single-phase supply voltage: 115 V ~ 50/60 Hz	
LXM 32●●●●M2	20 (10 metres in category C2, environment 1)
Single-phase supply voltage: 230 V ~ 50/60 Hz	
LXM 32●●●●M2	20 (10 metres in category C2, environment 1)
Three-phase supply voltage: 380 V ~ 50/60 Hz	
LXM 32●●●●N4	20
Three-phase supply voltage: 480 V ~ 50/60 Hz	
LXM 32●●●●N4	20

Anyway, if you would like to use an additional EMC filter, you can refer to the list below:

For servo drive	Maximum servo motor cable length conforming to		Reference	Weight
	EN 55011 class A Gr1	EN 55011 class A Gr2		
	IEC/EN 61800-3 category C2 in environment 1	IEC/EN 61800-3 category C3 in environment 2		
	Switching frequency 8 kHz	Switching frequency 8 kHz		
	m	m		kg
Single-phase supply voltage				
LXM 32●U45M2	50	100	VW3 A4 420	0.600
LXM 32●U90M2				
LXM 32●D18M2	50	100	VW3 A4 421	0.775
LXM 32●D30M2				
Three-phase supply voltage				
LXM 32●U60N4	50	100	VW3 A4 422	0.900
LXM 32●D12N4				
LXM 32●D18N4				
LXM 32●D30N4				
LXM 32●D72N4	50	100	VW3 A4 423	1.350

Line Chokes

In Lexium 15 range, motor chokes are available for Lexium 15 HP (LXM15HC●●N4X) that cannot be replaced by Lexium 32 yet.

Consequently, it's not required to use an EMC filters when migrating from Lexium 15 LP and MP to Lexium 32.

Anyway, if you would like to use a line choke, refer to the table below:



Line chokes						
For servo drive	Line current and THD				Reference	Weight
	Without choke		With choke			
	A	%	A	%		
Single-phase supply voltage: 115 V ~ 50/60 Hz						
LXM 32●U45M2	2.9	173	2.6	85	VZ1 L007UM50	0.880
LXM 32●U90M2	5.4	159	5.2	90	VZ1 L018UM20	1.990
LXM 32●D18M2	8.5	147	9.9	74		
LXM 32●D30M2	12.9	135	9.9	72		
Single-phase supply voltage: 230 V ~ 50/60 Hz						
LXM 32●U45M2	2.9	181	3.4	100	VZ1 L007UM50	0.880
LXM 32●U90M2	4.5	166	6.3	107	VZ1 L018UM20	1.990
LXM 32●D18M2	8.4	148	10.6	93		
LXM 32●D30M2	12.7	135	14.1	86		
Three-phase supply voltage: 380 V ~ 50/60 Hz						
LXM 32●U60N4	1.4	187	1.9	106	VW3 A4 553	3.500
LXM 32●D12N4	3	174	3.5	88		
LXM 32●D18N4	5.5	159	7.2	88	VW3 A4 554	6.000
LXM 32●D30N4	8.7	146	11.6	74		
LXM 32●D72N4	18.1	124	23.5	43		
Three-phase supply voltage: 480 V ~ 50/60 Hz						
LXM 32●U60N4	1.2	201	1.6	116	VW3 A4 553	3.500
LXM 32●D12N4	2.4	182	2.9	98		
LXM 32●D18N4	4.5	165	6	98	VW3 A4 554	6.000
LXM 32●D30N4	7	152	9.6	85		
LXM 32●D72N4	14.6	129	19.5	55		

Communication

Important notes

In Lexium 32 we don't offer motor chokes.

Due to market evolution Lexium 32 doesn't offer Modbus Plus or Fipio buses. Modbus TCP, Ethercat and Sercos II communication modules for Lexium 32M will be released in Q3 2010.

1. Lexium 15 CANopen/CANmotion replaced by Lexium 32M + VW3A3618 (SUB-D 9)

Lexium 15 servo drives integrate as standard an interface compatible to CANopen communication protocol (SUB-D 9). A communication module AM02CA001V000 (SUB-D 9) conforming CANopen rules is also available

Accessories

Description	LXM15●●●●●●	LXM32M●●●●●● + VW3A3618
Line terminator	Third party	TCSCAR01NM120

Cord sets and cables

Use			
From	to		Comments
	LXM15●●●●●●	LXM32M●●●●●● + VW3A3618	
LXM15●●●●●●	(Daisy chaining) TSXCANC●50 or TSXCANC●100 or TSXCANC●300 + VW3M3802	(Daisy chaining) TSXCANC●50 TSXCANC●100 TSXCANC●300 + VW3M3802	If you need daisy chaining, you can also use Lexium 32A or LXM32M●●●●●● + VW3A3608, see below
M340	TSXCANKCDF●●T● + TSXCANC●50 or TSXCANC●100 or TSXCANC●300 + VW3M3802	TSXCANKCDF●●T● + TSXCANC●50 TSXCANC●100 TSXCANC●300 + VW3M3802	
LXM15●●●●●● + AM02CA001V000	(Daisy chaining) TLACDCBA005 or TLACDCBA015 or TLACDCBA035 or TLACDCBA055	TSXCANC●50 (50 meters) or TSXCANC●100 (100 meters) or TSXCANC●300 (300 meters) + VW3M3802	If you need daisy chaining, you can also use Lexium 32A or LXM32M●●●●●● + VW3A3608, see below TSXCANCADD●● (CE marking, low smoke emission, halogen free, flame retardant). Also exist TSXCANCBDD●● (UL, CE marking, flame retardant)

2. Lexium 15 CANopen/CANmotion replaced by Lexium 32A or Lexium 32M + VW3A3608 (2 * RJ45)

Lexium 15 servo drives integrate as standard an interface compatible to CANopen communication protocol (SUB-D 9). A communication module AM02CA001V000 (SUB-D 9) conforming CANopen rules is also available

Accessories

Description	LXM15●●●●●●	LXM32A●●●●● or LXM32M●●●●● + VW3A3608
Line terminator RJ 45	Third party	TCSCAR013M120

Cord sets and cables

Use			
From	to		Comments
	LXM15●●●●●●	LXM32A●●●●● or LXM32M●●●●● + VW3A3608	
LXM15●●●●●●	(Daisy chaining) TSXCANC●50 or TSXCANC●100 or TSXCANC●300 + VW3M3802	(Daisy chaining) VW3CANCARR03 (0,3 meter) or VW3CANCARR1 (1 meter) (connector CN4 or CN5, VW3A3608 connector)	
M340	TSXCANKCDF●●T● + TSXCANC●50 or TSXCANC●100 or TSXCANC●300 + VW3M3802	VW3M3805R010 (1 meter) or VW3M3805R030 (3 meters) (connector CN4 or CN5, VW3A3608 connector)	
LXM15●●●●●● + AM02CA001V000	(Daisy chaining) TLACDCBA005 or TLACDCBA015 or TLACDCBA035 or TLACDCBA055	(Daisy chaining) VW3CANCARR03 (0,3 meter) or VW3CANCARR1 (1 meter) (connector CN4 or CN5, VW3A3608 connector)	

3. Lexium 15 + VW3M3306 Profibus DP replaced by Lexium 32M + VW3A3607

Accessories

Description	LXM15●●●●●●	LXM32M●●●●● + VW3A3607
SUB-D 9 connector with line termination	490NAD91103	490NAD91103

Cord sets and cables

Use			
From	to		Comments
	LXM15●●●●●●	LXM32M●●●●● + VW3A3607	
LXM15●●●●●● + VW3M3306	(Daisy chaining) 490NAD91104 + TSXPBSCA100 or TSXPBSCA400	(Daisy chaining) 490NAD91104 + TSXPBSCA100 or TSXPBSCA400	
LXM15●●●●●● + VW3M3306	(Daisy chaining) 490NAD91105 + TSXPBSCA100 or TSXPBSCA400	(Daisy chaining) 490NAD91105 + TSXPBSCA100 or TSXPBSCA400	

Documentation

LXM15●●●●●	LXM32●●●●●	Comments
Supplied with the drive	VW3A8200	Motion and Drive documentation DVD Also available in www.schneider-electric.com

Configuration tool and accessories

Description	Lexium 15 reference	Lexium 32 reference
Cord set	VW3M8601R03	VW3A8106 (SUB-D9 to RJ 45) or TCSMCNAM3M002P (USB to RJ45)
Configuration Software	UNILINK	SoMove ¹ Lexium CT ²

¹ Q1 2010

² Temporary tool, will be completely replaced by SoMove

Selection the servo motor

Selecting the corresponding BMH/BSH servo motor

To be done

Adaptor for motor encoder cable

If you want to keep the existing encoder cables, an adaptor can be used for the connection on Lexium 32. An adaptor exists for replacement of Lexium 05 (one 10-way Molex connector and one RJ45 connector) and another one for replacement of Lexium 15 (one 15-way SUB-D connector and one RJ45 connector).

Description	Replacement of Lexium 05 with Lexium 32	Replacement of Lexium 15 with Lexium 32
Adaptor for motor encoder cable	VW3M8111R10	VW3M8112R10

Mounting the drive and wiring

Refer to product manuals available on www.schneider-electric.com

Migration File

Twin Line servo motors SER3, DSM4
and Lexium15 servo motors BDH migration

to Lexium servo motors BMH, BSH

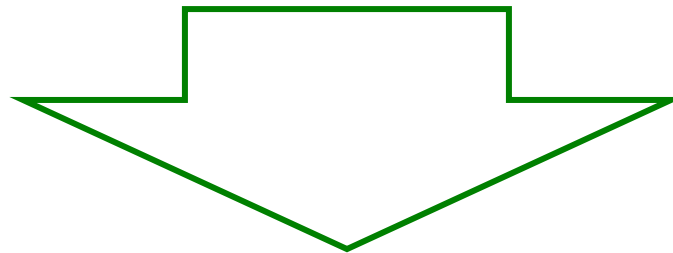
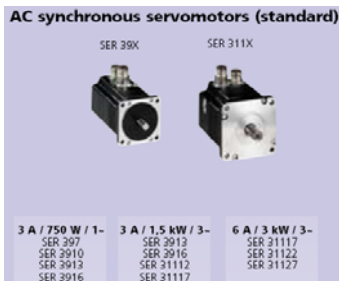


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1. Introduction

1.1 About this document

The purpose of this document is to assist you when replacing a servo motor from Twin Line SER3 and DSM4 or Lexium15 motor range BDH to Lexium BSH or BMH.

The migration of SER3 and DSM4 servo motors is related to the life cycle of Twin Line servo range, the end-of-sales is announced according product withdrawal process.

Besides this, the migration of BDH motors is related to the life cycle of Lexium 15 servo range, the end-of-sales is announced separately according product withdrawal process.

1.2 Scope of application

You can use this manual to select the Lexium servo motor BSH and BMH when creating a new machine or during a factory modernization phase.

The Lexium servo motors can replace all functions realized with SER3, DSM4 and BDH motors. Technical gaps of Lexium servo motors compared to SER3, DSM4 and BDH motors are also identified in this document.

This manual provides recommendations how to migrate the servo motors.

1.3 Prohibited applications

Lexium servo motors must not be used as maintenance parts when replacing a faulty Twin Line servo drive or a faulty Lexium 15 servo drive. The adaptations described in this manual are required for reinstallation. To replace a faulty Twin Line or Lexium 15 servo drive, please contact your local Schneider Electric sales office.

1.4 Technical reference information

To help you migrate your Twin Line servo or Lexium 15 installation to one using Lexium 32 servo motors, we recommend that you refer to the following documents (these supplement the information given in this Migration Manual):

- The Lexium 32 catalog and manuals: For detailed characteristics of the Lexium 32 offer.
- The Lexium Sizer software: For sizing your servo motor correctly.
- Installation manuals: For preparing all the groundwork when setting up your machine.

All these documents are available on www.schneider-electric.com.

1.5. Complete list of products to be phased-out

Migration plan for SER3, DSM4, BDH servo motors



servo motors -
migration plan 2009.x

2 Comparison criteria and motor selection

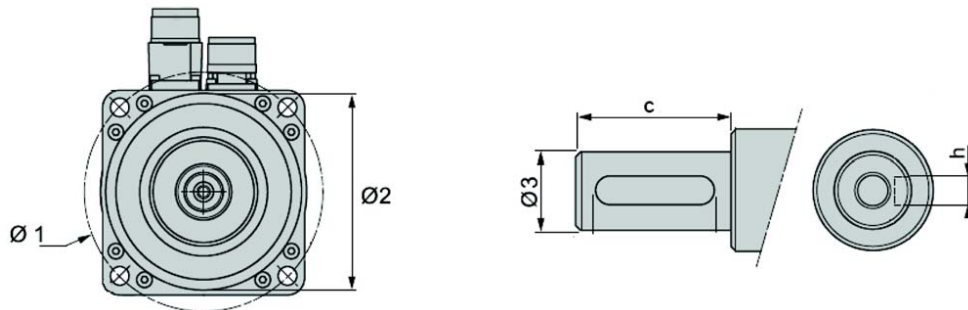
2.1 Motor inertia

An important aspect for the dynamic performance of a servo system is related to the inertia adaptation between load side (moving mass) and the related motor inertia.

The design of the different servo motor ranges brings a wide range of motor inertia per motor type with no direct relation between the different motor ranges. Find an overview of similar motor inertia classes in the tables “motor inertia comparison”.

2.2 Mechanical motor mount criteria

Furthermore, the motor mounting in the machine has to be considered before selecting an alternative servo motor. The main mechanical criteria are related to the motor flange:



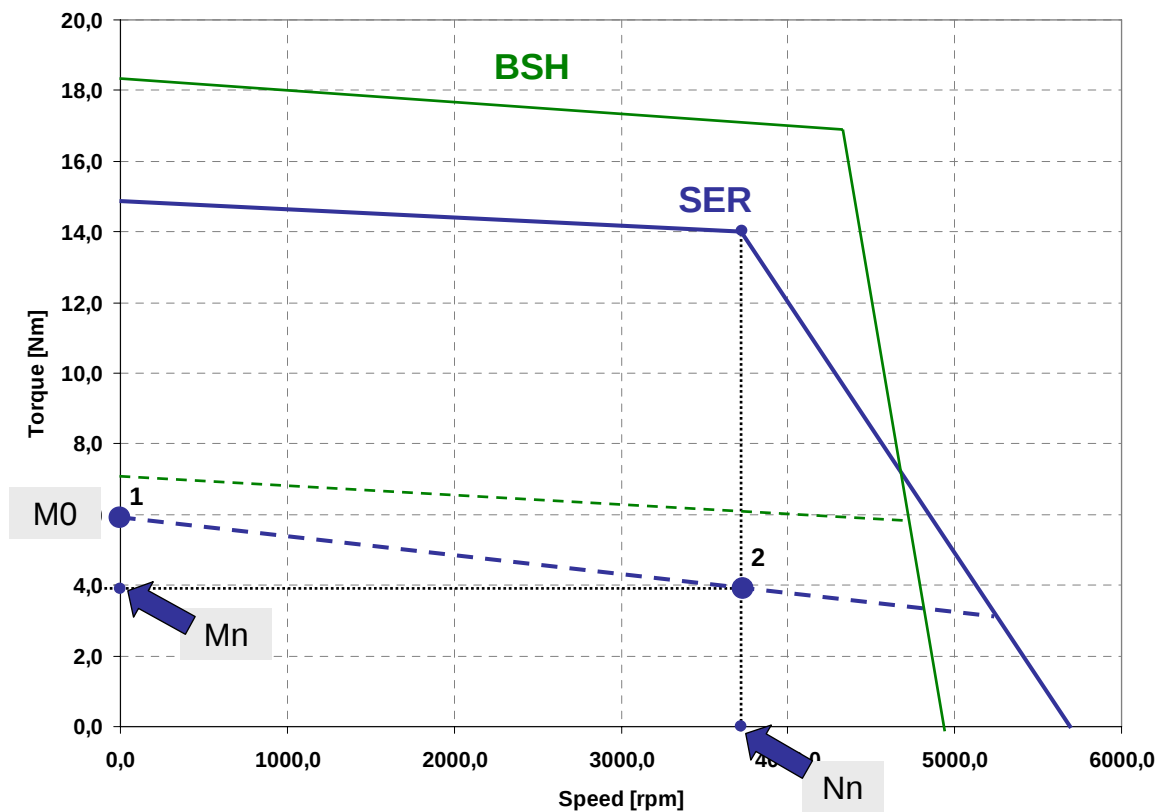
- $\varnothing 1$ Positioning diameter for mounting screws
- $\varnothing 2$ Centering collar
- $\varnothing 3$ Motor shaft diameter
- c Motor shaft length
- h key width (only if motor equipped with optional key shaft)

2.3 Characteristic curve

The electro mechanic behavior of any servo motor is defined by its characteristic curve. At this curve, two distinct points can be identified:

- Point 1 is known as “stall point” M_0 : this point indicates the stall torque which corresponds to the value of the “thermal torque” at zero speed.
- Point 2, known as “nominal operating point”: This point indicates the nominal torque M_n at the nominal speed N_n .

This criteria M_0 , M_n and N_n can be used to determine, for each motor drive combination (i.e. TwinLine drive with SER motor), a corresponding new motor drive combination (Lexium32 drive with BSH motor), which offers at least the same stall torque, nominal torque and nominal speed characteristics.



Torque speed diagram

M_0 stall torque
 M_n continuous torque at nominal speed
 N_n nominal speed

3. SER: Selection of an alternative motor

3.1 Motor inertia comparison

Motors grouped by frame size and motor inertia:

SER3 Motor	M0	Jm
	Nm	kg cm ²
SER 364	0,29	0,1
SER 366	0,48	0,18
SER 368	0,7	0,26
SER 3610	0,9	0,34
SER 397	1,1	0,8
SER 3910	2,2	1,6
SER 3913	2,9	2,4
SER 3916	3,6	3,2
SER 31112	4,2	4
SER 31117	6,6	8
SER 31122	10	11,3
SER 31127	13,4	15,5

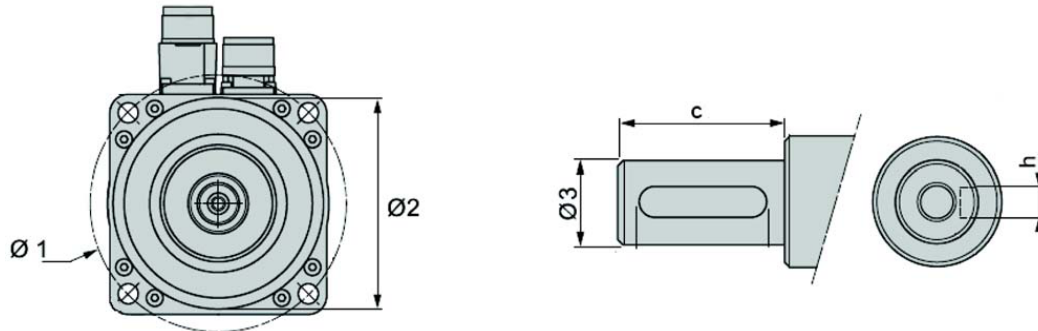
BSH Motor	M0	Jm
	Nm	kg cm ²
BSH 0551	0,5	0,059
BSH 0552	0,8	0,096
BSH 0553	1,2	0,134
BSH 0701	1,4	0,25
BSH 0702	2,2	0,41
BSH 0703	3,1	0,58
BSH 1001	3,3	1,4
BSH 1002	5,8	2,31
BSH 1003	8	3,22
BSH 1004	10	4,22
BSH 1401	11,1	7,41
BSH 1402	19,5	12,68
BSH 1402	19,5	12,68
BSH 1403	27,8	17,94
BSH 1404	33,4	23,7

BMH Motor	M0	Jm
	Nm	kg cm ²
BMH 701	1,40	0,59
BMH 702	2,48	1,13
BMH 703	3,40	1,67
BMH 1001	3,6	3,3
BMH 1002	6	6,27
BMH 1003	8,2	9,405
BMH 1401	10,3	17
BMH 1402	18,5	32,3
BMH 1403	24	48,45
BMH 2051	34,4	71,40
BMH 2052	62,5	129,00
BMH 2053	88,0	190,00

Jm: Motor inertia without brake

3.2 Requirement: Mechanical compatibility SER – BSH/BMH

Mechanical mount comparison



SER36•3L•S•0•••••50PTC

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
SER						
SER36•3L•S•0•••••50PTC	57.2	66,75	50	9	20	3
BSH						
BSH055•	55	63	40	9	20	3

SER36•3L•S•0•••••40PTC

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
SER						
SER36•3L•S•0•••••40PTC	57.2	66,75	40	9	20	3
BSH						
BSH055•	55	63	40	9	20	3

SER39•4L•S•0•••••80PTC

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
SER						
SER39•4L•S•0•••••80PTC	85	99-100	80	14	30	5
BSH						
BSH0701•	70	75	60	11	23	4
BSH0702•	70	75	60	11	23	4
BSH0703•	70	75	60	14	30	5

SER39•4L•S•0•••••73PTC

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
SER						
SER39•4L•S•0•••••73PTC	85	99-100	73	14	30	5
BSH						
BSH0701•	70	75	60	11	23	4
BSH0702•	70	75	60	11	23	4
BSH0703•	70	75	60	14	30	5

compliant data

Mechanical mount comparison SER – BSH/BMH (continued)

SER39•4L•S•0•••••50PTC

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
SER						
SER39•4L•S•0•••••50PTC	85	99-100	50	14	30	5
BSH						
BSH0701•	70	75	60	11	23	4
BSH0702•	70	75	60	11	23	4
BSH0703•	70	75	60	14	30	5

SER311•4L•S•0•••••95PTC

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
SER						
SER311•4L•S•0•••••95PTC	110	125,9-130	95	19	40	6
BSH						
BSH100•	100	115	95	19	40	6

SER311•4L•S•0•••••110PTC

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
SER						
SER311•4L•S•0•••••110PTC	110	125,9-130	110	19	40	6
BSH						
BSH100•	100	115	95	19	40	6

SER311•4L•S•0•••••56PTC

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
SER						
SER311•4L•S•0•••••56PTC	110	125,9-130	56	19	40	6
BSH						
BSH100•	100	115	95	19	40	6

compliant data

3.3 Requirement: Electromechanical compatibility

SER migrating to BSH servo motors

Motor drive combination		M0	Mn	Nn
SER 364 3L 3S	TL..32	0,29	0,28	8.500
SER 364 3L 5S	TL..32	0,29	0,28	4.500
SER 364 3L 7S	TL..32	0,29	0,29	3.000
SER 366 3L 3S	TL..32	0,48	0,43	9.000
SER 366 3L 5S	TL..32	0,48	0,46	3.500
SER 366 3L 7S	TL..32	0,48	0,47	2.500
SER 368 3L 3S	TL..32	0,7	0,53	8.500
SER 368 3L 5S	TL..32	0,75	0,65	4.300
SER 368 3L 7S	TL..32	0,75	0,71	1.700
SER 3610 3L 3S	TL..32	0,9	0,58	9.500
SER 3610 3L 5S	TL..32	0,9	0,75	4.500
SER 3610 3L 7S	TL..32	0,9	0,86	1.200
SER 397 4L 3S	TL..32	1,1	0,77	4.000
SER 397 4L 7S	TL..32	1,1	0,93	2.000
SER 3910 4L 3S	TL..32	2,2	1,74	2.500
SER 3910 4L 7S	TL..32	2,2	2	1.000
SER 3913 4L 3S	TL..32	2,9	2,35	3.000
SER 3913 4L 5S	TL..32	2,9	2,6	1.500
SER 3913 4L 7S	TL..32	2,9	2,8	400
SER 3916 4L 3S	TL..32	3,6	2,1	3.000
SER 3916 4L 5S	TL..32	3,6	2,7	2.000
SER 3916 4L 7S	TL..32	3,6	3,2	850
SER 31112 4L 3S	TL..32	4,2	1,9	3.500
SER 31112 4L 5S	TL..32	4,2	3,5	1.500
SER 31112 4L 7S	TL..32	4,2	4	350
SER 31117 4L 5S	TL..32	6,6	3,6	1.800
SER 31117 4L 7S	TL..32	6,6	6,1	600
SER 31122 4L 7S	TL..32	10	8,3	600
SER 31127 4L 7S	TL..32	13,4	7,2	900

Motor drive combination		M0	Mn	Nn
BSH 0552 T	LXM32.U90M2	0,8	0,51	8.500
BSH 0551 T	LXM32.U45M2	0,5	0,49	4.500
BSH 0551 T	LXM32.U45M2	0,5	0,49	4.500
BSH 0552 T	LXM32.U90M2	0,8	0,51	8.500
BSH 0551 T	LXM32.U45M2	0,5	0,49	4.500
BSH 0551 T	LXM32.U45M2	0,5	0,49	4.500
BSH 0552 T	LXM32.U90M2	0,8	0,51	8.500
BSH 0552 T	LXM32.U90M2	0,8	0,76	4.300
BSH 0552 T	LXM32.U90M2	0,8	0,78	1.700
BSH 0553 T	LXM32.U90M2	1,17	0,53	9.000
BSH 0553 T	LXM32.U90M2	1,2	1	4.500
BSH 0553 T	LXM32.U90M2	1,2	1,18	1.200
BSH 0553 T	LXM32.U90M2	1,2	1,1	4.000
BSH 0553 P	LXM32.U45M2	1,05	1,04	2.000
BSH 0702 P	LXM32.U90M2	2,2	1,7	2.500
BSH 0702 P	LXM32.U90M2	2,2	2,15	1.000
BSH 0703 P	LXM32.D18M2	3,1	2,7	3.000
BSH 0703 P	LXM32.D18M2	3,1	2,9	1.500
BSH 0703 M	LXM32.U90M2	3,1	3,06	400
BSH 1002 T	LXM32.D18M2	3,54	2,9	3.000
BSH 1002 P	LXM32.D18M2	5,8	4,2	2.000
BSH 1002 M	LXM32.U90M2	5,8	5,7	850
BSH 1004 T	LXM32.D30M2	7,9	4	3.500
BSH 1002 P	LXM32.D18M2	5,8	5,35	1.500
BSH 1002 P	LXM32.D18M2	5,8	5,7	350
BSH 1003 P	LXM32.D18M2	7,3	4,8	1.800
BSH 1003 P	LXM32.D18M2	7,3	7,3	600
BSH 1004 P	LXM32.D18M2	9,7	9,6	600
BSH 1402 P	LXM32.D30M2	14,7	13,5	900

SER migrating to BSH servo motors (continued)

Motor drive combination		M0	Mn	Nn
SER 397 4L 3S	TL..34	1,1	0,6	6.000
SER 397 4L 7S	TL..34	1,1	0,8	3.500
SER 3910 4L 3S	TL..34	2,2	1,4	4.500
SER 3910 4L 7S	TL..34	2,2	1,8	2.000
SER 3913 4L 3S	TL..34	2,9	1,9	5.500
SER 3913 4L 5S	TL..34	2,9	2,3	3.000
SER 3913 4L 7S	TL..34	2,9	2,7	1.100
SER 3916 4L 3S	TL..34	3,6	1,1	6.000
SER 3916 4L 5S	TL..34	3,6	1,9	4.000
SER 3916 4L 7S	TL..34	3,6	2,75	2.000
SER 31112 4L 3S	TL..34	4,2	1,5	6.000
SER 31112 4L 5S	TL..34	4,2	2,85	3.000
SER 31112 4L 7S	TL..34	4,2	3,8	800
SER 31117 4L 3S	TL..34	6,6	2,5	5.000
SER 31117 4L 5S	TL..34	6,6	3,7	3.500
SER 31117 4L 7S	TL..34	6,6	5,3	1.500
SER 31122 4L 7S	TL..34	10	8,1	1.500
SER 31127 4L 7S	TL..34	13,4	7,4	1.800

Motor drive combination		M0	Mn	Nn
BSH 0553 P	LXM32.D12N4	1,2	1,1	6.000
BSH 0553 M	LXM32.U60N4	1,2	0,97	3.500
BSH 0702 P	LXM32.D12N4	2,2	1,7	4.500
BSH 0702 P	LXM32.D12N4	2,2	2,1	2.000
BSH 0703 P	LXM32.D18N4	3,1	2,44	5.000
BSH 0703 P	LXM32.D18N4	3,1	2,7	3.000
BSH 0703 P	LXM32.D18N4	3,1	2,95	1.100
BSH 1002 T	LXM32.D18N4	3,54	2,6	6.000
BSH 1002 T	LXM32.D18N4	3,54	3,42	4.000
BSH 1002 T	LXM32.D18N4	3,54	3,48	2.000
BSH 1002 T	LXM32.D30N4	5,8	4	6.000
BSH 1002 P	LXM32.D18N4	5,8	4,9	3.000
BSH 1002 M	LXM32.D12N4	5,8	5,5	800
BSH 1004 T	LXM32.D30N4	7,9	5,2	5.000
BSH 1003 P	LXM32.D30N4	8	6,3	3.000
BSH 1003 P	LXM32.D18N4	7,3	7,1	1.500
BSH 1004 P	LXM32.D30N4	10	8,95	1.500
BSH 1402 P	LXM32.D30N4	14,7	13,2	1.800

Motor drive combination		M0	Mn	Nn
SER 3910 4L 3S	TL..36	2,2	1,55	3.500
SER 3913 4L 3S	TL..36	2,9	2,1	4.000
SER 3913 4L 5S	TL..36	2,9	2,45	2.500
SER 3916 4L 3S	TL..36	3,6	1,9	4.000
SER 3916 4L 5S	TL..36	3,6	2,35	3.000
SER 31112 4L 3S	TL..36	4,2	2,6	3.500
SER 31112 4L 5S	TL..36	4,2	3,4	1.800
SER 31112 4L 7S	TL..36	4,2	3,8	800
SER 31117 4L 3S	TL..36	6,6	3,7	3.500
SER 31117 4L 5S	TL..36	6,6	4,9	2.000
SER 31117 4L 7S	TL..36	6,6	5,7	1.100
SER 31122 4L 5S	TL..36	10	7	2.300
SER 31122 4L 7S	TL..36	10	8,9	800
SER 31127 4L 5D	TL..36	13,4	7,8	2.500
SER 31127 4L 7S	TL..36	13,4	11,1	1.000

Motor drive combination		M0	Mn	Nn
BSH 0702 P	LXM32.D12N4	2,2	2	3.500
BSH 0703 P	LXM32.D18N4	3,1	2,5	4.000
BSH 0703 P	LXM32.D18N4	3,1	2,75	2.500
BSH 1002 T	LXM32.D18N4	3,54	3,42	4.000
BSH 1002 T	LXM32.D18N4	3,54	3,45	3.000
BSH 1002 P	LXM32.D18N4	5,8	4,3	3.500
BSH 1002 M	LXM32.D12N4	5,8	4,2	1.800
BSH 1002 M	LXM32.D12N4	5,8	5,55	800
BSH 1003 P	LXM32.D30N4	8	6	3.500
BSH 1003 P	LXM32.D30N4	8	6,8	2.000
BSH 1003 M	LXM32.D12N4	7	6,5	1.100
BSH 1004 P	LXM32.D30N4	10	8,4	2.300
BSH 1004 P	LXM32.D30N4	10	9,4	800
BSH 1402 P	LXM32.D30N4	14,7	9,5	2.500
BSH 1402 P	LXM32.D30N4	14,7	14,5	1.000

Motor drive combination		M0	Mn	Nn
SER 31112 4L 3S	TL..38	4,2	2,85	3.000
SER 31117 4L 3S	TL..38	6,6	4,15	3.000
SER 31122 4L 5S	TL..38	10	7,7	1.800
SER 31127 4L 5D	TL..38	13,4	8,9	2.000
SER 31127 4L 7S	TL..38	13,4	10,7	1.200

Motor drive combination		M0	Mn	Nn
BSH 1002 P	LXM32.D18N4	5,8	4,9	3.000
BSH 1003 P	LXM32.D30N4	8	6,28	3.000
BSH 1004 P	LXM32.D30N4	10	8,75	1.800
BSH 1402 P	LXM32.D30N4	14,7	11,9	2.000
BSH 1402 M	LXM32.D30N4	19,5	17,7	1.200

4.2 Requirement: Mechanical compatibility DSM4 – BSH/BMH

DSM 4-07•

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
DSM 4						
DSM 4-07•	70	75	60 j6	11	23	4
BMH						
BMH 0701	70	75	60 j6	11	23	4
BMH 0702	70	75	60 j6	11	23	4
BMH 0703	70	75	60 j6	14	30	5

DSM 4-09•

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
DSM 4						
DSM 4-09•	92	100	80 j6	14	50	5
BMH						
BMH 100•	100	105	95 j6	19	40	6

DSM 4-11•

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
DSM 4						
DSM 4-11•	110	115	95 j6	19	40	6
BMH						
BMH 100•	100	105	95 j6	19	40	6

DSM 4-14•

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
DSM 4						
DSM 4-14•	140	165	130 j6	24	50	8
BMH						
BMH 140•	140	165	130 j6	24	50	8

DSM 4-19•

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
DSM 4						
DSM 4-19•	190	215	180 j6	32	58	10
BMH						
BMH 205•	205	215	180 j6	38	80	10

4.3 Requirement: Electromechanical compatibility

DSM4 migrating to BMH servo motors

Motor drive combination		M0	Mn	Nn
DSM 4-07.1-1xx.x4	TL..32	0,65	0,6	4.000
DSM 4-07.1-2xx.x4	TL..34	0,65	0,6	4.000
DSM 4-07.1-2xx.x6	TL..34	0,65	0,5	6.000
DSM 4-07.2-2xx.x6	TL..36	1,5	1	6.000
DSM 4-07.3-2xx.x4	TL..36	2,3	2	4.000
DSM 4-07.3-2xx.x6	TL..36	2,3	1,5	6.000
DSM 4-09.1-1xx.x3	TL..32	0,95	0,8	3.000
DSM 4-09.1-2xx.x4	TL..34	0,95	0,75	4.000
DSM 4-09.2-2xx.x3	TL..36	2,7	2,4	3.000
DSM 4-09.2-2xx.x6	TL..36	2,7	2	6.000
DSM 4-09.3-2xx.x3	TL..36	4,5	3,9	3.000
DSM 4-09.3-2xx.x6	TL..38	4,5	2,8	6.000
DSM 4-09.4-2xx.x4	TL..38	6	4,5	4.000
DSM 4-11.1-2xx.x3	TL..36	4,2	3,7	3.000
DSM 4-11.2-2xx.x6	TL..38	7	3,8	6.000
DSM 4-11.3-2xx.x4	TL..38	10	7,6	4.000
DSM 4-11.4-2xx.x4	TL..38	12	8,6	4.000
DSM 4-14.1-2xx.x3	TL..38	8,5	6,5	3.000
DSM 4-14.2-2xx.x4	TL..38	14	7,6	4.000
DSM 4-14.3-2xx.x3	TL..38	19	13,9	3.000
DSM 4-14.4-2xx.x2	TL..38	27	21,4	2.000
DSM 4-19.1-2xx.x1	TL..38	25	23,3	1.000
DSM 4-19.1-2xx.x2	TL..38	25	21,5	2.000
DSM 4-19.1-2xx.x3	TL..38	25	20	3.000
DSM 4-19.2-2xx.x1	TL..38	50	44,7	1.000

Motor drive combination		M0	Mn	Nn
BMH 0701 T	LXM32.U90M2	1,4	1,02	4.000
BMH 0701 P	LXM32.U60N4	1,2	0,83	4.000
BMH 0701 P	LXM32.U60N4	1,2	0,56	6.000
BMH 0703 P	LXM32.D12N4	2,6	1,28	6.000
BMH 0703 P	LXM32.D12N4	2,6	1,91	4.000
BMH 0703 T	LXM32.D18N4	3,4	2,35	6.000
BMH 0701 T	LXM32.U90M2	1,4	1,3	3.000
BMH 0701 P	LXM32.U60N4	1,2	0,83	4.000
BMH 0703 P	LXM32.D12N4	2,6	2,5	3.000
BMH 0703 T	LXM32.D18N4	3,4	2,35	6.000
BMH 1002 P	LXM32.D18N4	6,1	5,1	3.000
BMH 1002 T	LXM32.D30N4	6,1	3,8	6.000
BMH 1002 T	LXM32.D30N4	6,1	5	4.000
BMH 1002 P	LXM32.D18N4	6,1	5,1	3.000
BMH 1003 T	LXM32.D30N4	8,2	3,9	6.000
BMH 1402 P	LXM32.D72N4	18,5	8,8	4.000
BMH 1402 P	LXM32.D72N4	18,5	8,8	4.000
BMH 1003 P	LXM32.D30N4	8,3	6,9	3.000
BMH 1402 P	LXM32.D72N4	18,5	8,8	4.000
BMH 1403 P	LXM32.D72N4	24	15	3.000
BMH 2051 P	LXM32.D72N4	34,4	25,8	2.000
BMH 1403 P	LXM32.D72N4	24	21,5	1.000
BMH 2051 P	LXM32.D72N4	34,4	25,8	2.000
BMH 2051 P [*]	LXM32.D72N4	34,4	19,6	3.000
BMH 2052 P	LXM32.D72N4	62,5	50	1.000

[*] Peak torque at speed Nn is less than 200% Mn

5. BDH: Selection of an alternative motor

5.1 Motor inertia comparison

Motors grouped by frame size and motor inertia:

BDH Motor	M0	Jm
	Nm	kg cm ²
BDH 040 1	0,2	0,017
BDH 040 2	0,3	0,031
BDH 040 3	0,4	0,045
BDH 058 2	0,9	0,16
BDH 058 3	1,2	0,22
BDH 058 4	1,4	0,27
BDH 070 1	1,2	0,33
BDH 070 2	2,0	0,59
BDH 070 3	2,8	0,85
BDH 084 1	2,0	0,81
BDH 084 2	3,4	1,5
BDH 084 3	4,8	2,1
BDH 084 4	5,8	2,7
BDH 108 1	4,7	3,4
BDH 108 2	8,4	6,2
BDH 108 3	11,4	9,1
BDH 108 4	14,1	12
BDH 138 2	11,9	17
BDH 138 3	16,5	24
BDH 138 4	20,4	32
BDH 138 5	24,3	40
BDH 188 2	29,4	65
BDH 188 3	41,6	92
BDH 188 4	52,5	120

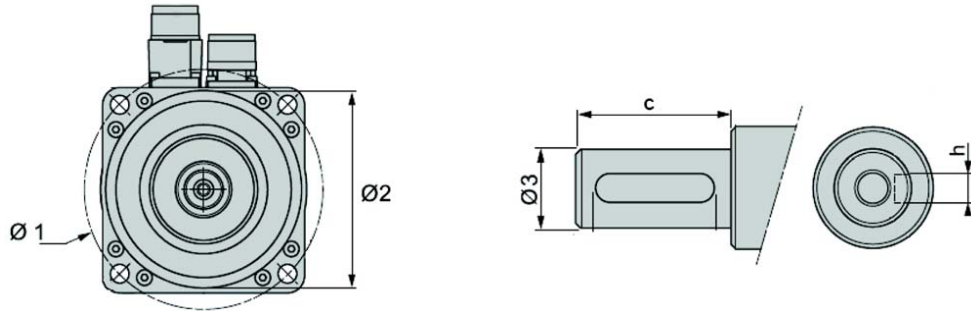
BSH Motor	M0	Jm
	Nm	kg cm ²
BSH 0551	0,5	0,059
BSH 0552	0,8	0,096
BSH 0553	1,2	0,134
BSH 0701	1,4	0,25
BSH 0702	2,2	0,41
BSH 0703	3,1	0,58
BSH 1001	3,3	1,4
BSH 1002	5,8	2,31
BSH 1003	8,0	3,22
BSH 1004	10,0	4,22
BSH 1401	11,1	7,41
BSH 1402	19,5	12,68
BSH 1403	27,8	17,94
BSH 1404	33,4	23,7

BMH Motor	M0	Jm
	Nm	kg cm ²
BMH 0701	1,4	0,59
BMH 0702	2,5	1,13
BMH 0703	3,4	1,67
BMH 1001	3,6	3,3
BMH 1002	6,0	6,27
BMH 1003	8,2	9,405
BMH 1401	10,3	17
BMH 1402	18,5	32,3
BMH 1403	24,0	48,45
BMH 2051	34,4	71,40
BMH 2052	62,5	129,00
BMH 2053	88,0	190,00

Jm: Motor inertia without brake

5.2 Requirement: Mechanical compatibility BDH – BSH/BMH

Mechanical comparison



BDH070•A (IEC)

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
BDH						
BDH 070•	70	75	60 j6	14	30	5
BMH						
BMH 0701•	70	75<>82	60 j6	11	23	4
BMH 0702•	70	75<>82	60 j6	11	23	4
BMH 0703	70	75<>82	60 j6	14	30	5

BDH 108•A (IEC)

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
BDH						
BDH 108•	108	130	110 j6	24	50	4,763
BMH						
BMH 100•	100	105	95 j6	19	40	6

BDH 138•A (IEC)

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
BDH						
BDH 138•	138	165	130 j6	32	58	4,763
BMH						
BMH 140•	140	165	130 j6	24	50	8

BDH 188•A (IEC)

Description	Flange size	Ø1	Ø2	Ø3	c	h
Unit	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
BDH						
BDH 188•	188	215	180 j6	38	80	10
BMH						
BMH 205•	205	215	180 j6	38	80	10

compliant data

5.3 Requirement: Electromechanical compatibility

BDH migrating to BSH/BMH servo motors

Motor drive combination			M0	Mn	Nn	Motor drive combination			M0	Mn	Nn
BDH 0401B	LXM15 LD13 M3	230V	0,18	0,17	8.000	BMH 0701T	LXM32.U60N4	400V	0,74	0,42	8.000
BDH 0401B	LXM15 LD13 M3	230V	0,18	0,17	8.000	BSH 0551T	LXM32.U45M2	230V	0,5	0,32	8.000
BDH 0402C	LXM15 LD13 M3	230V	0,31	0,28	8.000	BSH 0551T	LXM32.U45M2	230V	0,5	0,32	8.000
BDH 0403C	LXM15 LD13 M3	230V	0,41	0,36	8.000	BSH 0551T	LXM32.U45M2	230V	0,5	0,32	8.000
BDH 0582C	LXM15 LU60 N4	230V	0,84	0,78	3.000	BMH 0701T	LXM32.U90M2	230V	1,4	1,3	3.000
BDH 0582C	LXM15 LU60 N4	400V	0,84	0,72	6.500	BMH 0701T	LXM32.D12N4	400V	1,4	1,15	6.500
BDH 0582E	LXM15 LD13 M3	230V	0,87	0,71	6.500	BMH 0701T	LXM32.D12N4	400V	1,4	1,15	6.500
BDH 0583C	LXM15 LU60 N4	230V	1,13	1	2.500	BMH 0701T	LXM32.U90M2	230V	1,4	1,35	2.500
BDH 0583C	LXM15 LU60 N4	400V	1,13	0,87	5.000	BMH 0701P	LXM32.D12N4	400V	1,4	1,31	5.000
BDH 0583D	LXM15 LD13 M3	230V	1,16	1,06	4.000	BMH 0701T	LXM32.U90M2	230V	1,4	1,02	4.000
BDH 0583D	LXM15 LD10 N4	400V	1,16	0,94	7.500	BMH 0702T	LXM32.U12N4	400V	1,38	1,01	7.500
BDH 0583F	LXM15 LD21 M3	230V	1,18	0,92	8.000	BMH 0702T	LXM32.U12N4	400V	1,38	0,95	8.000
BDH 0584C	LXM15 LU60 N4	230V	1,38	1,28	2.000	BMH 0702P	LXM32.U90M2	230V	1,4	1,36	2.000
BDH 0584C	LXM15 LU60 N4	400V	1,38	1,18	4.000	BMH 0701P	LXM32.U12N4	400V	1,4	1,33	4.000
BDH 0584D	LXM15 LD13 M3	230V	1,41	1,18	3.500	BMH 0702T	LXM32.U90M2	230V	1,38	1,21	3.500
BDH 0584D	LXM15 LD10 N4	400V	1,41	1	7.000	BMH 0702T	LXM32.U12N4	400V	1,38	1,1	7.000
BDH 0584F	LXM15 LD21 M3	230V	1,42	1,06	6.000	BMH 0702T	LXM32.U12N4	400V	1,38	1,27	6.000
BDH 0701C	LXM15 LU60 N4	230V	1,15	1,09	2.000	BMH 0702P	LXM32.U90M2	230V	1,4	1,36	2.000
BDH 0701C	LXM15 LU60 N4	400V	1,15	1,04	4.500	BMH 0701T	LXM32.D12N4	400V	1,4	1,31	4.500
BDH 0701E	LXM15 LD13 M3	230V	1,2	1,2	5.000	BMH 0702T	LXM32.U12N4	400V	1,38	1,34	5.000
BDH 0702C	LXM15 LU60 N4	230V	2	1,85	1.500	BMH 0702P	LXM32.U90M2	230V	2,48	2,35	1.500
BDH 0702C	LXM15 LU60 N4	400V	2	1,7	3.000	BMH 0702P	LXM32.U12N4	400V	2,48	2,22	3.000
BDH 0702D	LXM15 LD13 M3	230V	2,04	1,82	2.500	BMH 0702P	LXM32.D18M2	230V	2,48	2,25	2.500
BDH 0702D	LXM15 LD10 N4	400V	2,04	1,6	4.500	BMH 0702P	LXM32.U12N4	400V	2,48	1,69	4.500
BDH 0702H	LXM15 LD21 M3	230V	2,1	1,56	4.500	BMH 0702T	LXM32.D18M2	230V	2,48	1,87	4.500
BDH 0703C	LXM15 LU60 N4	400V	2,71	2,55	2.000	BMH 0703P	LXM32.U12N4	400V	2,61	2,57	2.000
BDH 0703E	LXM15 LD13 M3	230V	2,79	2,55	2.000	BMH 0703T	LXM32.D18M2	230V	3,4	3,05	2.000
BDH 0703E	LXM15 LD10 N4	400V	2,79	2,4	4.000	BMH 0703P	LXM32.U18N4	400V	3,4	2,7	4.000
BDH 0703H	LXM15 LD21 M3	230V	2,88	2,08	4.500	BMH 0703T	LXM32.U18M2	230V	3,4	2,12	4.000
BDH 0841C	LXM15 LU60 N4	400V	1,95	1,83	2.500	BMH 0702P	LXM32.U12N4	400V	2,48	2,26	2.500
BDH 0841E	LXM15 LD13 M3	230V	2,02	1,84	2.500	BMH 0702T	LXM32.D18M2	230V	2,48	2,26	2.500
BDH 0841E	LXM15 LD10 N4	400V	2,02	1,67	5.000	BMH 0702P	LXM32.U18N4	400V	2,48	2,05	5.000
BDH 0841H	LXM15 LD21 M3	230V	2,06	1,48	6.000	BMH 0702T	LXM32.D18M2	230V	2,48	1,53	5.500
BDH 0842C	LXM15 LU60 N4	400V	3,35	3,1	1.500	BMH 0703P	LXM32.U18N4	400V	3,4	3,13	1.500
BDH 0842E	LXM15 LD13 M3	230V	3,42	3,15	1.500	BMH 0703T	LXM32.D18M2	230V	3,4	3,13	1.500
BDH 0842E	LXM15 LD10 N4	400V	3,42	2,9	3.000	BMH 0703T	LXM32.U18N4	400V	3,4	2,88	3.000
BDH 0842G	LXM15 LD21 M3	230V	3,53	2,94	3.000	BMH 0703T	LXM32.D18M2	230V	3,4	2,86	3.000
BDH 0842G	LXM15 LD17 N4	400V	3,53	2,5	5.000	BMH 0703T	LXM32.U18N4	400V	3,4	2,52	5.000
BDH 0842J	LXM15 LD28 M3	230V	3,56	2,5	5.500	BMH 0703T	LXM32.U18N4	400V	3,4	2,52	5.000
BDH 0843E	LXM15 LD10 N4	400V	4,7	4	2.500	BMH 1002P	LXM32.U18N4	400V	6	5,5	2.500
BDH 0843G	LXM15 LD21 M3	230V	3,96	3,96	2.500	BMH 1002T	LXM32.D30M2	230V	6	5,6	2.500
BDH 0843G	LXM15 LD17 N4	400V	4,8	3,25	4.000	BMH 1002P	LXM32.U18N4	400V	6	3,82	4.000
BDH 0843K	LXM15 LD28 M3	230V	4,9	3	5.000	BMH 1002T	LXM32.D30M2	230V	6	3,45	4.000
BDH 0844E	LXM15 LD10 N4	400V	5,76	4,85	2.000	BMH 1002P	LXM32.U18N4	400V	6	5,66	2.000
BDH 0844G	LXM15 LD21 M3	230V	4,76	4,76	2.000	BMH 1002T	LXM32.D30M2	230V	6	5,73	2.000
BDH 0844G	LXM15 LD17 N4	400V	5,88	3,95	3.500	BMH 1002P	LXM32.U18N4	400V	6	4,3	3.500
BDH 0844J	LXM15 LD28 M3	230V	6	4	3.500	BMH 1002T	LXM32.D30M2	230V	6	3,9	3.500
BDH 1081E	LXM15 LD10 N4	400V	4,7	4	2.500	BMH 1002P	LXM32.U18N4	400V	6	5,2	2.500
BDH 1081G	LXM15 LD17 N4	400V	4,75	2,75	4.500	BMH 1002P	LXM32.U18N4	400V	6	3,4	4.500
BDH 1081K	LXM15 LD28 M3	230V	4,9	2,65	5.000	BMH 1002P	LXM32.U18N4	400V	6	3,4	4.500
BDH 1082E	LXM15 LD10 N4	400V	8,34	7,5	1.500	BMH 1003P	LXM32.U30N4	400V	8,27	7,78	1.500
BDH 1082G	LXM15 LD17 N4	400V	8,43	7	2.500	BMH 1003P	LXM32.U30N4	400V	8,27	7,2	2.500
BDH 1082K	LXM15 LD28 N4	400V	8,6	4,16	5.000	BMH 1003T	LXM32.U30N4	400V	8,2	5,05	5.000
BDH 1082M	LXM15 LD40 N4	230V	8,6	5,5	4.000	BSH 1401T	LXM32.U72N4	400V	11,1	8,57	4.000
BDH 1083G	LXM15 LD17 N4	400V	11,4	9,8	2.000	BSH 1401T	LXM32.U72N4	400V	11,1	9,83	2.000
BDH 1083K	LXM15 LD28 N4	400V	11,6	6,91	4.500	BMH 1402P	LXM32.U72N4	400V	18,5	8,8	4.000
BDH 1084G	LXM15 LD17 N4	400V	14,3	12,7	1.500	BMH 1402P	LXM32.U72N4	400V	18,5	15,2	1.500
BDH 1084K	LXM15 LD28 N4	400V	14,4	9,22	4.000	BMH 1402P	LXM32.U72N4	400V	18,5	8,8	4.000
BDH 1382G	LXM15 LD17 N4	400V	11,9	10,6	1.500	BMH 1402P	LXM32.U72N4	400V	18,5	15,2	1.500
BDH 1382K	LXM15 LD28 N4	400V	12,2	8,45	3.500	BMH 1402P	LXM32.U72N4	400V	18,5	10,2	3.500
BDH 1383G	LXM15 LD17 N4	400V	16,5	15	1.000	BMH 1402P	LXM32.U72N4	400V	18,5	16,3	1.000
BDH 1383K	LXM15 LD28 N4	400V	16,8	12,69	3.000	BMH 1402P	LXM32.U72N4	400V	18,5	11,5	3.000

BDH migrating to BSH/BMH servo motors (continued)

Motor drive combination			M0	Mn	Nn	Motor drive combination			M0	Mn	Nn
BDH 0842J	LXM15 MD28 N4	230V	3,56	2,5	5.000	BMH 0703T	LXM32.U18N4	400V	3,4	2,52	5.000
BDH 0843K	LXM15 MD28 N4	230V	4,9	3	5.000	BMH 1001T	LXM32.U18N4	400V	3,57	3,01	5.000
BDH 0844J	LXM15 MD28 N4	230V	6	4	3.500	BMH 1002T	LXM32.D30M2	230V	6	3,9	3.500
BDH 1081K	LXM15 MD28 N4	230V	4,9	2,65	5.000	BMH 1002T	LXM32.U30N4	400V	6	4,45	5.000
BDH 1082K	LXM15 MD28 N4	400V	8,6	4,16	5.000	BMH 1003T	LXM32.U30N4	400V	8,2	5,05	5.000
BDH 1082M	LXM15 MD40 N4	230V	8,6	5,5	4.000	BMH 1003T	LXM32.U30N4	400V	8,2	6,01	4.000
BDH 1083K	LXM15 MD28 N4	400V	11,6	6,91	4.500	BMH 1402P	LXM32.U72N4	400V	18,5	8,8	4.000
BDH 1083M	LXM15 MD40 N4	230V	11,4	8,5	3.000	BMH 1402P	LXM32.U72N4	400V	18,5	11,5	3.000
BDH 1083P	LXM15 MD56 N4	230V	11,4	6,2	5.000	BMH 1402P	LXM32.U72N4	400V	18,5	8,8	4.000
BDH 1084K	LXM15 MD28 N4	400V	14,4	9,22	4.000	BMH 1402P	LXM32.U72N4	400V	18,5	8,8	4.000
BDH 1084L	LXM15 MD40 N4	400V	14,1	9	4.000	BMH 1402P	LXM32.U72N4	400V	18,5	8,8	4.000
BDH 1084N	LXM15 MD56 N4	230V	14,1	9,1	4.000	BMH 1402P	LXM32.U72N4	400V	18,5	8,8	4.000
BDH 1382K	LXM15 MD28 N4	400V	12,2	8,45	3.500	BMH 1402P	LXM32.U72N4	400V	18,5	10,2	3.500
BDH 1382M	LXM15 MD40 N4	400V	12,2	7	5.000	BMH 1402P	LXM32.U72N4	400V	18,5	8,8	4.000
BDH 1382P	LXM15 MD56 N4	230V	12,3	8,7	4.000	BMH 1402P	LXM32.U72N4	400V	18,5	8,8	4.000
BDH 1383K	LXM15 MD28 N4	400V	16,8	12,69	3.000	BMH 1402P	LXM32.U72N4	400V	18,5	11,5	3.000
BDH 1383M	LXM15 MD40 N4	400V	17	14	2.000	BMH 1402P	LXM32.U72N4	400V	18,5	14	2.000
BDH 1383N	LXM15 MD56 N4	400V	17	9,4	4.500	BMH 1402P	LXM32.U72N4	400V	18,5	8,8	4.000
BDH 1384K	LXM15 MD28 N4	400V	20,8	17	2.000	BMH 1403P	LXM32.U72N4	400V	24	18,5	2.000
BDH 1384L	LXM15 MD40 N4	400V	21	15,6	3.000	BMH 1403P	LXM32.U72N4	400V	24	15	3.000
BDH 1384P	LXM15 MD56 N4	400V	20,4	11,3	4.500	BMH 1403P	LXM32.U72N4	400V	24	11	4.000
BDH 1385K	LXM15 MD28 N4	400V	24,8	20,5	2.000	BMH 1403P	LXM32.U72N4	400V	24	18,5	2.000
BDH 1385M	LXM15 MD40 N4	400V	25	19	2.500	BMH 2051P	LXM32.U72N4	400V	34,4	23,5	2.500
BDH 1385N	LXM15 MD56 N4	400V	24,3	16	3.500	BMH 1403P	LXM32.U72N4	400V	24	13	3.500
BDH 1882K	LXM15 MD28 N4	400V	29,7	25,7	1.500	BMH 2051P	LXM32.U72N4	400V	34,4	28,1	1.500
BDH 1882M	LXM15 MD40 N4	400V	30	24	2.000	BMH 2051P	LXM32.U72N4	400V	34,4	25,8	2.000
BDH 1882P	LXM15 MD56 N4	400V	29,4	20,5	3.000	BMH 2051P	LXM32.U72N4	400V	34,4	19,6	3.000
BDH 1883M	LXM15 MD40 N4	400V	42	34	1.500	BMH 2052P	LXM32.U72N4	400V	62,5	41	1.500
BDH 1883P	LXM15 MD56 N4	400V	41,6	29,5	2.000	BMH 2052P	LXM32.U72N4	400V	62,5	30,7	2.000
BDH 1884L	LXM15 MD40 N4	400V	53	44	1.000	BMH 2052P	LXM32.U72N4	400V	62,5	50	1.000
BDH 1884P	LXM15 MD56 N4	400V	52,6	39	1.500	BMH 2052P	LXM32.U72N4	400V	62,5	41	1.500