

The essential guide Lexium

motion control

helping you easily
select the right product

2008



Motion

Lexium Pac

High-performance motion control

Complete offer for general *motion control*.



Lexium Motion Controller Up to 8 synchronized real axes

- PLCopen function blocks
- Application-specific function blocks (flying shear, rotary knife, grouping/ungrouping, clamping, etc.)
- Easy setup via user-friendly interface and remote display terminal
- Axis adjustment as close as possible to the machine



Lexium 05 servodrives from 4 A to 25 A

- Lexium 05 operates in either torque or speed control mode by means of its ± 10 V analog interface. Its encoder interface also performs the function of an electronic gearbox.



Lexium 15 servodrives from 1,5 to 70 A

- Multifunction servodrives for all servo motor type
- “All in one” concept:
CANopen integrated, indexer, EMC filters, braking resistor and security functions.

Contents

Motion controller and servodrives

Selection guide: Motion control 2 and 3

Selection guide: Servodrives 4 and 5

● Axis Cards 6

● Lexium Controller 7 and 8

● Architectures 9 and 10

● **Lexium 05** servodrives
for BSH servomotors 11 to 15

● **Lexium 15** servodrives
for BSH and BDH servomotors 16 to 23

Wide variety of control architectures:

- Fieldbus: FIPIO, CANopen (native), Modbus Plus, Profibus DP
- Motion Bus: synchronised CANopen dedicated Motion Bus, Sercos®.



BSH servomotors from 0.5 to 90 Nm

- Dynamic servomotors with low inertia
- Extensive speed range from 1250 to 8000 rpm
- IP40 or IP65 protection, brake, single turn or multiturn SinCos encoder
- Straight or angle connectors

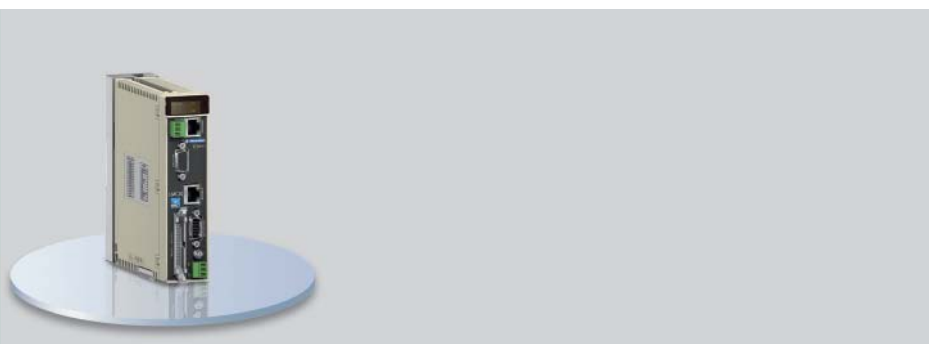


BDH servomotors from 0.18 to 53 Nm

- High adaptability and compact servomotors
- Extensive speed range from 1000 rpm to 8000 rpm
- IP54 or IP67 protection, brake, resolver, single turn or multi turn SinCos encoder
- Right angle turnable connectors

Selection guide

Motion control



LMC

Compact machines

- Handling, assembly, inspection, on-the-fly-processes, etc.

| | |
|---|---|
| Solutions | Motion controller-based solutions Standalone solutions |
| Standalone solution | Yes |
| Maximum number of axes | 8 |
| Control mode | Synchronized CANopen dedicated to Motion |
| Coordinated axes | Yes (PLCopen single-axis library) |
| Synchronized axes: | PLCopen multi-axis library |
| * Slave axis (velocity)/Gearing | Yes |
| * Slave axis (position)/Phasing | Yes |
| * Cam profiles | Yes |
| * Interpolation | Yes |
| * Application function block | Rotary knife, Flying shear, Clamping, Grouping/Ungrouping |
| Configuration and programming software | Easy Motion, Motion Pro (Codesys) |
| Graphic display terminal | Yes |
| Standards | IEC 61131 PLCopen |



CFY / CAY

Compact machines

- Handling, assembly, etc.



CSY

Special machines

- Handling, on-the-fly processes, etc.



Twido

Compact machines

- Handling, etc.



M340

Compact and special machines

- Assembly, handling, etc.

| | | | |
|----------------------|-----------|----------------------|----------------------------|
| PLC-based solutions | | PLC-based solutions | |
| PLC modules | | Standalone solutions | |
| No | | Yes | |
| 1 to 4 | 16 | 16 | 63 |
| Analog/Pulse | SERCOS | CANopen | CANopen |
| Yes | Yes | Yes | Yes (PLCopen, MFB library) |
| Yes | Yes | No | No |
| Yes | Yes | No | Yes (with Lexium 15) |
| No | Yes | No | Yes (with Lexium 15) |
| No | Yes | No | No |
| Yes (with TSXCAY 33) | Yes | No | No |
| No | No | No | No |
| Unity/PL7 | Unity/PL7 | Twido Soft | Unity |
| No | No | No | No |
| IEC 61131 | IEC 61131 | IEC 61131 | IEC 61131 PLCopen |

Selection guide

Servodrives



⇒ Applications:

Motion Bus, single axis, simple master/slave, materials handling, automatic assembly, automated inspection, coil winding, cutting to length, packaging.



Lexium 05

- **Compactness:** side by side mounting, integrated EMC class A filters.
- **Simplicity:** simple setting-up, "Simply start" menu
- **Safety:** "Power removal" function
- **Openness:** CANopen or Profibus DP integrated
- **Intelligence:** 4 operating modes, including integrated point to point positioning.

⇒ Applications:

Motion Bus, single axis, simple master/slave, advance master/slave, coordinated axes, materials handling, automatic assembly, coil winding, cutting to length, tension control.



Lexium 15

- **Compactness:** integrated EMC filters and braking resistors
- **Simplicity:** simple setting-up, "Simply start" menu
- **Safety:** "Power removal" function
- **Openness:** CANopen integrated
- Absolute positioning control
- **Intelligence:** Up to 200 programmable motion tasks, 8 operating modes, including integrated point to point positioning.

| | | |
|--------------------------------------|--|---|
| Supply voltage ranges, 50/60 Hz | Single-phase 100/120 V Single-phase 200/240 V 3-phase 200/240 V 3-phase 380/480 V | Single-phase 200/240 V 3-phase 200/240 V 3-phase 208/480 V |
| Input voltage | 24 V, < to 1 A | 24...28 or 20...30 V, 1 or 2.5 A |
| Output voltage | Maximum 3-phase voltage equal to line supply voltage | |
| Electrical isolation | Between power and control sections (inputs, outputs, power supplies) | |
| Protection | "Power Removal" safety function | |
| Number of inputs/outputs: | | |
| Analog inputs/outputs | 2/ – | 2/2 MP/HP only |
| Logic inputs/outputs | 4/2 | 5/2 |
| Safety inputs | 2 | 1 |
| Relay outputs | – | 1 |
| Drive characteristics: | | |
| Switching frequency | 4 or 8 kHz | 8 kHz |
| Control loop characteristics: | | |
| Torque, Speed, Position | 62.5µs, 250µs, 250µs | 62.5µs, 250µs, 250µs |
| Control signals | | |
| Resolver feedback | – | 1 |
| Motor encoder feedback signals | 1 | 1 |
| Pulse/direction, A/B encoder signals | 1 | 1 |
| Simulated encoder output signals | 1 | 1 |
| Communication | | |
| integrated option | Motion Bus, CANopen, Profibus DP ou Modbus | Motion Bus, CANopen |
| – | – | Profibus DP, Modbus Plus, FIPIO, Sercos, Ethernet |
| Option cards | – | Input/output extension card |
| Standards and certifications | IEC/EN 61800-5-1, IEC/EN 50178, IEC/EN 61800-3 environments 1 and 2 catégories C2 and C3 EN 55011 class A group 1 and 2, (73/23/CEE and 93/68/CEE) and CEM (89/336/CEE) UL, cUL, IEC 60721-3-3 class 3C1 | EN 50178, EN 61800-3, environments 1 and 2, catégories C2 and C3, (73/23/CEE) and CEM (89/336/CEE) UL, cUL (Canada) IEC 60721-3-3 class 3C1 IEC 60721-3-3, class 3K3 |

Servomotors



BSH motors

- **Wide range**
- High dynamics
- **Compactness:** new salient pole based winding technology.
- Automatic motor identification and high precision positioning provided by SinCos Hiperface encoder



BDH motors

- **Wide range:** more than 68 types of motor.
- Excellent adaptability:
 - Degree of protection IP54 or IP67
 - With or without brake
 - Straight or right-angled connectors
 - Smooth shaft or with key
- **Compactness:** new salient pole based winding technology.
- Absolute positioning control provided by SinCos Hiperface encoder

| | | |
|--------------------------------|---|--|
| Flange size (mm) | 55, 70, 100, 140, 205 | 40, 58, 70, 84, 108, 138, 188 |
| Nominal speed (rpm) | 500 to 8000 | 500 to 8000 |
| Nominal torque (Nm) | 0.41 to 80 | 0.17 to 48 |
| Maximum rotational speed (rpm) | 3800 to 8000 | 6000 to 8000 |
| Continuous stall torque (Nm) | 0.5 to 90 | 0.18 to 53 |
| Peak stall torque (Nm) | 1.4 to 300 | 0.61 to 108 |
| Type of mounting | IEC | IEC, NEMA |
| IP protection | IP40, IP65 | IP54, IP67 |
| Shaft end | Smooth With closed shaft key (IEC standard) | Smooth With closed shaft key (IEC standard) With open shaft key (NEMA standard) |
| Holding brake | Option Option | |
| Integrated sensor | Single turn SinCos Hiperface encoder Multiturn SinCos Hiperface encoder | Resolver Single turn SinCos Hiperface encoder Multiturn SinCos Hiperface encoder |
| Connector type | IP65 Straight Elbowed | IP65 Elbowed |
| Magnet type | Neodymium Iron Boron (NdFeB) | Neodymium Iron Boron (NdFeB) |
| Standards | Operating characteristics, robustness, safety, ..., conforming to IEC/EN 60034-1 | |
| Certifications | European directives UL1004 | |
| Altitude | Altitude: 1000 m without derating, 2000 m with k = 0.86 (1), 3000 m with k = 0.8 | 1000 m without derating, 2000 m with k = 0.94 (1), 3000 m with k = 0.83 |
| Operational temperature | Ambient operating temperature: - 20...40 °C conforming to DIN 50019R14. Maximum 55 °C with derating above 40 °C by 1% per additional °C | 5...40 °C conforming to EN 50178 Climatic class 3K3. Maximum 50 °C with derating above 40 °C by 1% per additional °C |
| Relative humidity | Class F conforming to DIN 400 Climatic class 3K3 | 95% without condensation conforming to EN 50178 |
| Nominal life of bearings | L _{10h} = 20 000 hours | L _{10h} = 20000 hours |

(1) k: Derating factor



| Module type | For translators (amplifier for stepper motor) | | For analog control servomotors (for asynchronous and brushless motors) | | | | |
|-----------------------------|--|----------|---|----------|---------------------|----------|-------------------------|
| Control outputs | RS 422 | | +/- 10 V | | | | |
| Compatible with servodrives | Lexium 05 | | Lexium 05/15 | | | | |
| Functions | Linear axes | – | Limited | | Limited or infinite | | Limited or infinite (1) |
| | Slave axes | – | With static ratio | | With dynamic ratio | | – |
| Frequency for each axis | 187 kHz | | 500 kHz with incremental encoder, 200 kHz with absolute encoder (SSI serial or parallel output) | | | | |
| Number of axes | 1 | 2 | 2 | 4 | 2 | 4 | 3 |
| Reference | TSXCFY11 | TSXCFY21 | TSXCAY21 | TSXCAY41 | TSXCAY22 | TSXCAY42 | TSXCAY33 |

(1) With linear interpolation on 2 or 3 axes



| Module type | Servomotors with SERCOS® digital ring (for brushless motors) | | |
|-----------------------------|---|--|---|
| Control outputs | SERCOS® network ring | | |
| Compatible with servodrives | Lexium 15 | | |
| Functions | Linear or infinite independent axes, slave axes with cam profile or ratio | | |
| Processing | 4 sets of axes with linear interpolation from 2 to 8 axes | 4 sets of axes with linear and circular interpolation from 2 to 3 axes (2) | 4 sets of axes with linear interpolation from 2 to 8 axes |
| Frequency for each axis | 4 Mb SERCOS® network ring | | |
| Number of axes | 8 (3) | 8 (3) | 16 (4) |
| Reference | TSXCSY84 | TSXCSY85 | TSXCSY164 |

(2) TSXCSY85 module supplied with TJE trajectory editor: linear trajectories with links between segments according to polynomial or circular interpolation and circular trajectories.

(3) 8 real axes, 4 imaginary axes and 4 remote axes

(4) 16 axes (real axes, imaginary and remote axes)

Connection accessories for Modicon Premium modules

| Type | Fiber optic cables For Lexium 15 MDHA1...N00/A00 drives | |
|------------|--|-------------|
| Connection | Pre-equipped cable with SMA connectors | |
| Reference | L = 0.3 m | 990MCO00001 |
| | L = 0.9 m | 990MCO00003 |
| | L = 1.5 m | 990MCO00005 |
| | L = 4.5 m | 990MCO00015 |
| | L = 16.5 m | 990MCO00055 |
| | L = 22.5 m | 990MCO00075 |
| | L = 37.5 m | 990MCO00125 |

Lexium Controller Motion control Motion controller



| Controller type | | Optimized | Standard | Extended | |
|-----------------------------------|-----------------------------|-----------|----------|------------|------------|
| Drives synchronisation | Up to 4 axes | 2 ms | | | |
| Motion bus | Up to 8 axes | 4 ms | | | |
| Drives interpolated position loop | | 250 µs | | | |
| Internal memory | RAM | 2 Mbytes | | | |
| | Flash Eeprom | 2 Mbytes | | | |
| | Non volatile RAM | 64 kbytes | | | |
| Application expertise | Application functions (AFB) | yes | | | |
| | PLCopen single axis control | yes | | | |
| | PLCopen multi axis control | yes | | | |
| | 2D interpolation | yes | | | |
| Number of logical inputs | | 8 | 8 | 8 | 8 |
| Number of logical outputs | | 4 | 8 | 8 | 8 |
| Communication | Modbus | yes | yes | yes | yes |
| | CANopen automation | – | yes | yes | yes |
| | Ethernet TCP/IP | – | yes | yes | yes |
| | Profibus DP V1 | – | – | yes | – |
| | Device Net | – | – | – | yes |
| Reference | | LMC10 | LMC20 | LMC20A1307 | LMC20A1309 |

Graphic terminal



A remote graphic terminal *combined* with the Lexium Controller is offered as an option with Lexium PAC :

| | |
|-----------|---|
| | <ul style="list-style-type: none"> ■ Backup and recovery of application data ■ Manual mode wiring test ■ Adjustment and diagnostics of Lexium Controller and servodrive ■ Maintenance |
| Reference | VW3M1701 |

Remote graphic display terminal accessories

| Remote cables | Equipped with 2 RJ45 connectors | |
|---------------|---------------------------------|----------------|
| Reference | L = 1 m | VW3 A1 104 R10 |
| | L = 3 m | VW3 A1 104 R30 |
| | L = 5 m | VW3 A1 104 R50 |

| Female/female RJ45 adapter | |
|----------------------------|------------|
| Reference | VW3 A1 105 |

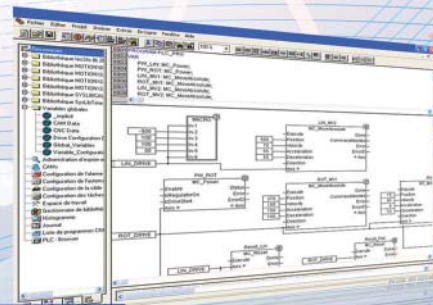
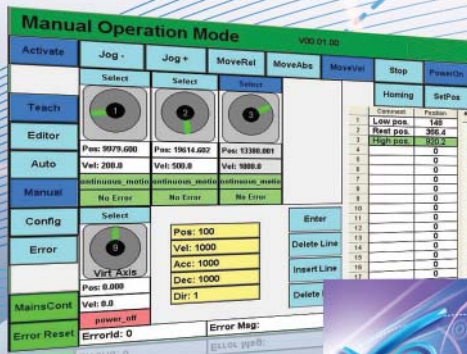
Lexium Controller Motion control Softwares solutions

Software solution included in Lexium Controller



Easy Motion... for configuring the motion control functions

- Configuration of the axis
- Servodrive and Lexium Controller adjustment and diagnostics
- Creation of a position register by teaching
- Axis operating modes and manual control management
- Edit positioning tasks
- Edit cam profiles
- Application backup and recovery

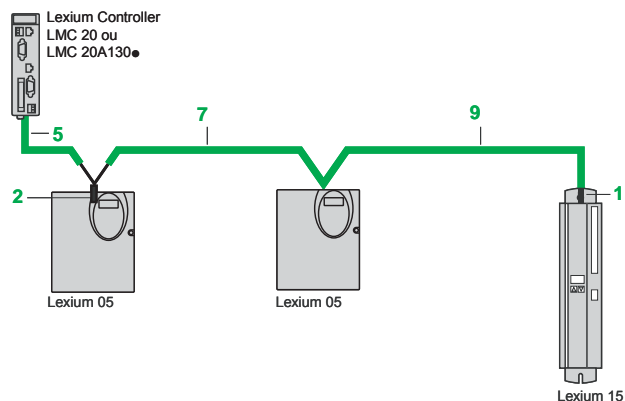


Motion Pro... for configuring and programming the motion control functions

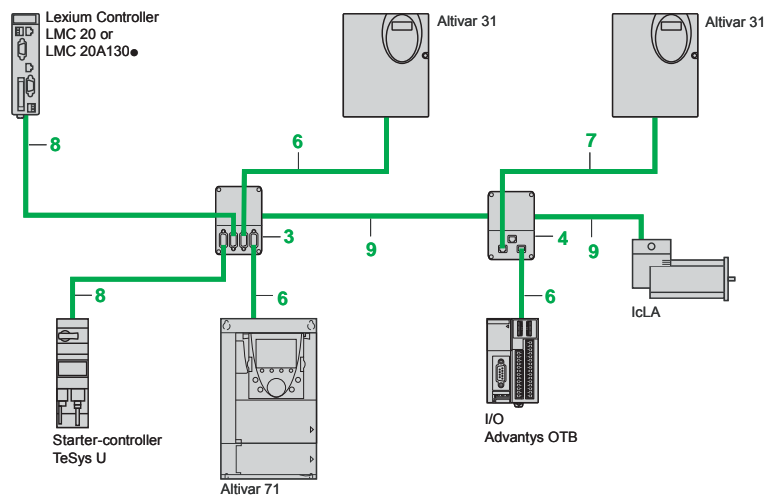
- Retains the benefits of Easy Motion for motion control
- The entire application, automation functions and motion control are realized using a programming editor IEC 61131 compliant
- Machine signature recording
- Program code protection



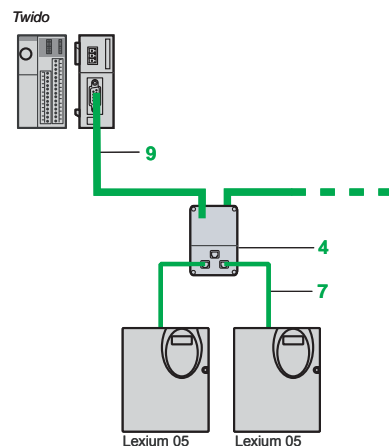
Examples of connection to the CANopen bus dedicated to Motion with the Lexium Controller



Example of connection to the CANopen bus dedicated to Automation with the Lexium Controller



Example of connection to the CANopen bus with Twido and Lexium 05





TSX CAN TDM4



VW3 CAN TAP2

| Connectors and junction boxes | | |
|--|-----|------------------|
| Designation | No. | Reference |
| 9-way female SUB-D connector/screw terminals | 1 | VW3 M3 802 |
| Daisy chain tap with 3 RJ45 connectors and 0.3 m cable | 2 | TCS CTN023F13M03 |
| IP 20 CANopen junction boxes | 3 | TSX CAN TDM4 |
| 4 SUB-D and line terminator | | |
| IP 20 CANopen junction boxes | 4 | VW3 CAN TAP2 |
| 2 RJ45 and line terminator | | |

(1) Product not to be used on Motion bus

| Cordsets | | | |
|--|-----|------------|-----------------|
| Designation | No. | Length (m) | Reference |
| 9-way female SUB-D with line terminator/RJ45 cordset | 5 | 1 | VW3 M3 805R010 |
| 9-way female SUB-D/RJ45 cordsets | | 0.5 | TCS CCN4F3M05T |
| RJ45/RJ45 cordsets | 7 | 1 | TCS CCN4F3M1T |
| | | 3 | TCS CCN4F3M3T |
| | | 0.3 | VW3 CAN CARR 03 |
| 9-way female SUB-D/9-way female SUB-D cordsets | 8 | 1 | VW3 CAN CARR 1 |
| | | 0.3 | TSX CAN CADD 03 |
| | | 1 | TSX CAN CADD 1 |
| | | 3 | TSX CAN CADD 3 |
| | | 5 | TSX CAN CADD 5 |



| Connection cables | | | | |
|----------------------|-------------------|------------|-----------|----------------|
| Designation | No. | Length (m) | Reference | |
| IP 20 CANopen cables | Halogen-free | 9 | 50 | TSX CAN CA 50 |
| | | | 100 | TSX CAN CA 100 |
| | | | 300 | TSX CAN CA 300 |
| | UL Certified | | 50 | TSX CAN CB 50 |
| | | | 100 | TSX CAN CB 100 |
| | | | 300 | TSX CAN CB 300 |
| | Harsh environment | | 50 | TSX CAN CD 50 |
| | | | 100 | TSX CAN CD 100 |
| | | | 300 | TSX CAN CD 300 |

| Control and connectivity | |
|--|-------------|
| + or - 10 V. Pulse / direction Motion Bus / CANopen | Profibus DP |
| Torque control, speed control, point to point, gearing, homing | |



| Servodrive type | Digital for servomotors | | | |
|--------------------|----------------------------|-------------|-------------|----|
| | Size 1 | Size 2 | Size 3 | |
| Supply voltage | 110...120 VAC single phase | | | |
| Output current (A) | Continuous (RMS) | 4 | 8 | 15 |
| | Maximum (RMS) | 7 | 12 | 20 |
| Power (kW) | 0.4 | 0.65 | 0.85 | |
| Safety function | Integrated "Power Removal" | | | |
| Braking resistor | Integrated | | | |
| EMC filter | Integrated | | | |
| Reference (1) | LXM05●D10F1 | LXM05●D17F1 | LXM05●D28F1 | |



| Servodrive type | Digital for servomotors | | | | | | |
|--------------------|----------------------------|-------------|-------------|-----------------------|--------------|--------------|----|
| | Size 1 | Size 2 | Size 3 | Size 1 | Size 2 | Size 3 | |
| Supply voltage | 200...240 VAC single phase | | | 200...240 VAC 3-phase | | | |
| Output current (A) | Continuous (RMS) | 4 | 8 | 15 | 4 | 8 | 17 |
| | Maximum (RMS) | 7 | 12 | 20 | 7 | 12 | 30 |
| Power (kW) | 0.75 | 1.2 | 2.5 | 0.75 | 1.4 | 3.2 | |
| Safety function | Integrated "Power Removal" | | | | | | |
| Braking resistor | Integrated | | | | | | |
| EMC filter | Integrated | | | Not integrated | | | |
| Reference (1) | LXM05●D10M2 | LXM05●D17M2 | LXM05●D28M2 | LXM05●D10M3X | LXM05●D17M3X | LXM05●D42M3X | |



| Servodrive type | Digital for servomotors | | | | |
|--------------------|----------------------------|-------------|-------------|-------------|----|
| | Size 2 | Size 2 | Size 3 | Size 4 | |
| Supply voltage | 380...480 VAC 3-phase | | | | |
| Output current (A) | Continuous (RMS) | 6 | 9 | 15 | 25 |
| | Maximum (RMS) | 10 | 16 | 24 | 40 |
| Power (kW) | 1.4 | 2 | 3 | 6 | |
| Safety function | Integrated "Power Removal" | | | | |
| Braking resistor | Integrated | | | | |
| EMC filter | Integrated | | | | |
| Reference (1) | LXM05●D14N4 | LXM05●D22N4 | LXM05●D34N4 | LXM05●D57N4 | |

(1) To order a Lexium 05 servodrive with CANopen bus integrated, replace "●" by "A". Example LXM05●D14N4 become LXM05AD14N4.

To order a Lexium 05 servodrive with PROFIBUS DP bus integrated, replace "●" by "B". Example LXM05●D14N4 become LXM05BD14N4.



| Multilingual configuration software | | For PC |
|--|-------------------------------------|---|
| Configuration of drives and softstarters | | Lexium 05 / Altivar / Altistart |
| Environment | | Microsoft Windows ® |
| Languages | | English - French - German - Italian - Spanish |
| Reference | PowerSuite CD-ROM Connection kit | VW3A8106 |

Additional EMC input filters



| Supply voltage | | | Single phase | 3-phase |
|----------------------|-------------|--------|--|--|
| Maximum cable length | Category C3 | | 40 m (100 m with a switching frequency of 8 kHz) | 40 m (100 m with a switching frequency of 8 kHz) |
| | Category C2 | | 20 m | 20 m |
| Reference | Drives | Size 1 | LXM05AD10F1, LXM05AD10M2 | LXM05AD10M3X |
| | Filters | | VW3A31401 | VW3A31402 |
| | Drives | Size 2 | LXM05AD17F1, LXM05AD17M2 | LXM05AD17M3X, LXM05AD14N4 |
| | Filters | | VW3A31403 | VW3A31404 |
| | Drives | Size 3 | LXM05AD28F1, LXM05AD28M2 | LXM05AD42M3X, LXM05AD22N4, LXM05AD34N4 |
| | Filters | | VW3A31405 | VW3A31406 |
| | Drives | Size 4 | | LXM05AD57N4 |
| | Filters | | – | VW3A31407 |

Line inductances



| Supply voltage | | | Single phase | | 3-phase | |
|----------------|-------------|--------|--------------------|--------------------|-----------------|--------------------------|
| | | | 110...120 V | 200...240 V | 200...240 V | 380...480 V |
| References | Drives | Size 1 | LXM05AD10F1 | LXM05AD10M2 | LXM05AD10M3X | – |
| | Inductances | | VZ1L007UM50 | VZ1L007UM50 | VW3A4551 | – |
| | Drives | Size 2 | LXM05AD17F1 | LXM05AD17M2 | LXM05AD17M3X | LXM05AD10N4, LXM05AD22N4 |
| | Inductances | | VZ1L018UM20 | VZ1L018UM20 | VW3A4552 | VW3A4551 |
| | Drives | Size 3 | LXM05AD28F1 | LXM05AD28M2 | LXM05AD42M3X | LXM05AD34N4 |
| | Inductances | | VZ1L018UM20 | VZ1L018UM20 | VW3A4553 | VW3A4552 |
| | Drives | Size 4 | | – | – | LXM05AD57N4 |
| | Inductances | | – | – | – | VW3A4552 |



| Controller type | Holding brake |
|----------------------|---------------|
| Power supply | 24 VDC |
| Maximum current | 1.6 A |
| Maximum power | 50 W |
| Degree of protection | IP20 |
| Reference | VW3M3103 |

External braking resistors



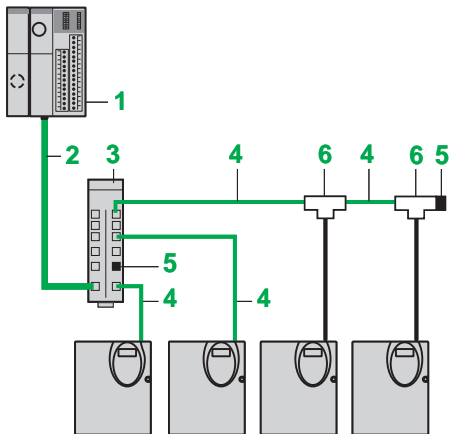
| Resistor type | External braking for Lexium 05 drives | | | | | | | | | |
|---------------|---------------------------------------|------------|-------|----------|----------|----------|----------|----------|----------|----------|
| Resistance | | | 10 Ω | | | | 27 Ω | | 72 Ω | |
| Power | | | 400 W | | 100 W | | 200 W | | 400 W | |
| Reference (1) | cable length | L = 0.75 m | VW3 | A7601R07 | A7602R07 | A7603R07 | A7604R07 | A7605R07 | A7606R07 | A7607R07 |
| | | L = 2 m | VW3 | A7601R20 | A7602R20 | A7603R20 | A7604R20 | A7605R20 | A7606R20 | A7607R20 |
| | | L = 3 m | VW3 | A7601R30 | A7602R30 | A7603R30 | A7604R30 | A7605R30 | A7606R30 | A7607R30 |

(1) In order to select the braking resistor, you need to calculate the continuous and peak power to be dissipated in it. Please consult our Lexium 05 catalog



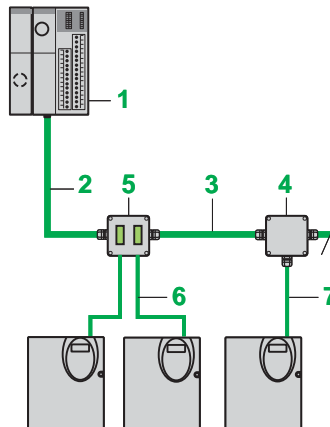
| Drives | | Lexium 05 | | |
|--|-----------------------------|---|---|---|
| Connection type | Description | Splitter box with 10 RJ45 connectors and 1 screw terminal block | Junction box for drop cable VW3A8306D30 | Subscriber socket for drop cable VW3A8306 |
| | Reference | LU9GC3 | TSXSCA50 | TSXSCA62 |
| Line terminators | For RJ 45 connector | R = 120 Ω, C = 1 nf | | R = 150 Ω, C = 1 nf |
| | Reference | VW3A8306RC | | VW3A8306R |
| | For screw terminals | R = 120 Ω, C = 1 nf | | R = 150 Ω, C = 1 nf |
| | Reference | VW3A8306DRC | | VW3A8306DR |
| T-junction boxes | With integrated cable 0.3 m | VW3A8306TF03 | | |
| | With integrated cable 1 m | VW3A8306TF10 | | |
| Cables | Description | 2 RJ 45 connectors | | |
| | Reference | 0.3 m | VW3A8306R03 | |
| | | 1 m | VW3A8306R10 | |
| | | 3 m | VW3A8306R30 | |
| RS 485 shielded twisted double pair cables | Description | 1 RJ45 connector and one stripped end | | |
| | Reference | 3 m | VW3A8306D30 | |
| | Description | Supplied without connector | | |
| | Reference | 100 m | TSXCSA100 | |
| | | 200 m | TSXCSA200 | |
| | | 500 m | TSXCSA500 | |

Connection with RJ45 splitter box and screw terminals



- 1 Controller Twido
- 2 Cable for controller Twido serial link
- 3 Modbus splitter box LU9 GC3
- 4 Modbus drop cables VW3 A8 306R●●
- 5 Line terminators VW3 A8 306RC
- 6 Modbus T-junction boxes VW3 A8 306TF●● (with cable)

Connection with junction box or subscriber sockets



- 1 Controller Twido
- 2 Cable for controller Twido serial link
- 3 Modbus cables TSX CSA●00
- 4 T-junction box TSX SCA 50
- 5 Subscriber socket TSX SCA 62
- 6 Modbus drop cables VW3 A8 306
- 7 Modbus drop cables VW3 A8 306 D30

Connection via screw terminals

In this case, a Modbus drop cable (VW3 A8 306D30) and line terminators (VW3 A8 306DRC) are used.



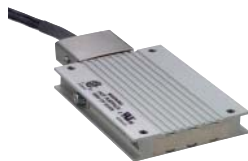
| Servodrive type | | Lexium 15 LP | | | | | |
|---------------------|------------------------------|---|-------------|-------------|-------------------------------|-------------|-------------|
| Supply voltage | | 3-phase 200...240 V, 50/60 Hz Available in 1-phase with derating | | | 3-phase 208...480 V, 50/60 Hz | | |
| Output current (A) | Continuous | 3 A | 6 A | 10 A | 1,5 A | 3 A | 6 A |
| | Maximum (discontinuous, 2 s) | 13 A | 21 A | 28 A | 6 A | 10 A | 17 A |
| Powers (kW) | | 1 | 2.1 | 3.4 | 1.1 | 2.1 | 4.3 |
| Security function | | Power removal integrated | | | | | |
| Braking resistor | | Integrated | | | | | |
| EMC filters class A | | Integrated | | | | | |
| Line reactors | | Integrated | | | | | |
| References | | LXM15LD13M3 | LXM15LD21M3 | LXM15LD28M3 | LXM15LU60N4 | LXM15LD10N4 | LXM15LD17N4 |



| Servodrive type | | Lexium 15 MP | | |
|---------------------|------------------------------|--|-------------|-----------|
| Supply voltage | | 3-phase 208...480 V, 50/60 Hz 200-240 V, 50/60 Hz | | |
| Output current (A) | Continuous | 10 A | 14 A | 20 A |
| | Maximum (discontinuous, 5 s) | 28 A | 40 A | 56 A |
| Powers (kW) | | 5.7 | 7.9 | 11.4 |
| Security function | | Power removal integrated | | |
| Braking resistor | | Integrated | | |
| EMC filters class A | | Integrated | | |
| Line reactors | | Integrated | | |
| References | | LXM15MD28N4 | LXM15MD40N4 | LXMMD56N4 |



| Servodrive type | | Lexium 15 HP | |
|---------------------|------------------------------|--|--------------|
| Supply voltage | | 3-phase 208...480 V, 50/60 Hz | |
| Output current (A) | Continuous | 40 A | 70 A |
| | Maximum (discontinuous, 5 s) | 80 A | 140 A |
| Powers (kW) | | 22.3 | 42.5 |
| Security function | | Power removal integrated | |
| Braking resistor | | Option, requires in neutral mode TT and TN | |
| EMC filters class A | | Option | |
| Line reactors | | Option, requires in neutral mode TT and TN | |
| References | | LXM15HC11N4X | LXM15HC20N4X |



| Resistor type | External braking for Lexium 15 servodrives | | | |
|--------------------------|--|----------------|----------------|----------------|
| Continuous power PPr (W) | 100 | 200 | 400 | 1000 |
| Reference | 5 Ω | – | – | VW3A7707 |
| | 10 Ω | – | VW3A7601R● (1) | VW3A7705 |
| | 27 Ω | VW3A7602R● (1) | VW3A7603R● (1) | VW3A7604R● (1) |
| | 72 Ω | VW3A7605R● (1) | VW3A7606R● (1) | VW3A7607R● (1) |
| | 100 Ω | VW3A7608R● (1) | – | – |

(1) For a length of connection cable of 0,75 m replace ● by 07
 2 m replace ● by 20
 3 m replace ● by 30

Additional EMC input filters



| Supply voltage | 3-phase 208...480 VAC | |
|---------------------------------|--------------------------|--------------|
| Type of Lexium 15 HP servodrive | LXM15HC11N4X | LXM15HC20N4X |
| Input rms current (A) | 42 | 75 |
| Maximum motor cable length | 100 m | 100 m |
| References | VW3M4101 | VW3M4102 |

Line reactors



| Supply voltage | 3-phase 208...480 VAC | |
|---------------------------------|--------------------------|--------------|
| Type of Lexium 15 HP servodrive | LXM15HC11N4X | LXM15HC20N4X |
| Input current (A) | 60 | 75 |
| References (1) | VW3M4301 | VW3M4302 |

(1) Must be ordered with the drive, unless an isolation transformer is being used with IT connection

Motor reactor

| Supply voltage | 3-phase 208...480 VAC | | | |
|---------------------------------|---|----------------------------|-------------|-------------|
| Type of Lexium 15 HP servodrive | LXM15LD13M3 LXM15LD21M3 LXM15L...N4 | LXM15LD28M3 LXM15MD28N4 | LXM15MD40N4 | LXM15MD56N4 |
| Input nominal current (A) | 6 | 10 | 14 | 20 |
| References | VW3M5301 | VW3M5302 | VW3M5303 | VW3M5304 |

| Control and connectivity | |
|--|---|
| + or -10 V. Pulse / direction Motion Bus / CANopen | Profibus DP / FIPIO Modbus Plus / Ethernet Sercos |
| Torque control loop, speed control loop, position control loop, motion tasks, point to point, gearing, position registers, homing | |

| Accessories type | Backup key |
|------------------|--|
| Use | Saves the servodrive operating parameters and instantly reinitiates settings (without PC) |
| References | VW3 M8 701 |

| Accessories type | Master / Slave cable | Cable for PC serial port |
|------------------|----------------------------------|--------------------------|
| Connector type | 2 SUB-D connectors female 9 pins | |
| References | L = 0.5 m VW3 M8 501 R05 | |
| | L = 2 m VW3 M8 501 R20 | |
| | L = 3 m – | VW3 M8 501 R03 |
| | L = 6 m VW3 M8 501 R60 | |

Inputs/outputs extension card

| Card type | Card AM0 INE 001V000 |
|-------------------------|----------------------|
| Number of logic inputs | 10 |
| Number of logic outputs | 8 |

Communication bus connection CANopen

| Connection type | Integrated Connector | Card AM02CA001V000 | | | |
|-----------------|------------------------|--|--------------|------------------|--------------------|
| | | Connector | Cable | | |
| Connector type | 1 SUB-D male 9 pins | 2 SUB-D male 9 pins 1 SUB-D female 9 pins | – | – | – |
| Cable type | – | – | Halogen-free | UL certification | Harsh environments |
| References | L = 50 m | – | TSXCANCA50 | TSXCANCB50 | TSXCANCD50 |
| | L = 100 m | – | TSXCANCA100 | TSXCANCB100 | TSXCANCD100 |
| | L = 300 m | – | TSXCANCA300 | TSXCANCB300 | TSXCANCD300 |

FIPIO card



| Connection type | Card AM0 FIP 001V000 | Connector | |
|-----------------|----------------------|----------------------|--------------------------------|
| | | Connector | Cable |
| Connector type | SUB-D male 9 pins | – | – |
| Cable type | – | Standard environment | Harsh environments |
| References | L = 100 m | – | TSX FP CA 100 TSX FP CR 100 |
| | L = 200 m | – | TSX FP CA 200 TSX FP CR 200 |
| | L = 500 m | – | TSX FP CA 500 TSX FP CR 500 |

Modbus Plus card

| Connection type | | Card AM0 MBP 001V000 | Cable | |
|-----------------|-------------|----------------------|----------------|--|
| | | Connector | | |
| Connector type | | SUB-D female 9 pins | - | |
| References | L = 30.5 m | - | 490 NAA 271 01 | |
| | L = 152.5 m | - | 490 NAA 271 02 | |
| | L = 305 m | - | 490 NAA 271 03 | |
| | L = 457 m | - | 490 NAA 271 04 | |
| | L = 1525 m | - | 490 NAA 271 06 | |

Profibus DP card



| Connection type | | Card DP VW3 M3 306 | Cable | |
|-----------------|-----------|-----------------------|----------------|--|
| | | Connector | | |
| Connector type | | 2 SUB-D female 9 pins | - | |
| References | L = 100 m | - | TSX PBS CA 100 | |
| | L = 400 m | - | TSX PBS CA 400 | |

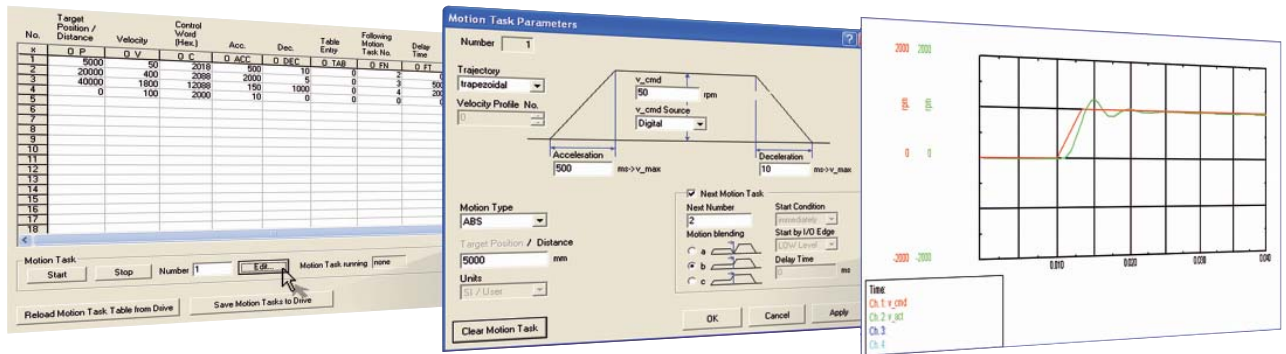
Ethernet card

| Connection type | | Card AM0 ETH 001V000 | Cable | |
|-----------------|----------|----------------------|-----------------------|----------------------|
| | | Connector | | |
| Connector type | | 2 RJ45 connectors | - | |
| Cable type | | - | Straight twisted pair | Crossed twisted pair |
| References | L = 2 m | - | 490 NTW 000 02 | - |
| | L = 5 m | - | 490 NTW 000 05 | 490 NTW 000 05 |
| | L = 12 m | - | 490 NTW 000 12 | - |
| | L = 15 m | - | - | 490 NTW 000 15 |
| | L = 40 m | - | 490 NTW 000 40 | 490 NTW 000 40 |
| | L = 80 m | - | 490 NTW 000 80 | 490 NTW 000 80 |

Sercos card



| Connection type | | Card AM0 SER 001V000 | Cable | |
|------------------------|------------|----------------------|----------------|--|
| | | Connector | | |
| Connector type | | SMA | - | |
| Fiber optic references | L = 0.3 m | - | 990 MCO 000 01 | |
| | L = 0.9 m | - | 990 MCO 000 03 | |
| | L = 1.5 m | - | 990 MCO 000 05 | |
| | L = 4.5 m | - | 991 MCO 000 15 | |
| | L = 16.5 m | - | 991 MCO 000 55 | |
| | L = 22.5 m | - | 991 MCO 000 75 | |
| | L = 37.5 m | - | 992 MCO 001 25 | |



Unilink software for PC is a tool for configuring Lexium 15 servodrive operating parameters.

Its simple, easy-to-follow graphic interface helps to reduce setup costs.

It incorporates various functions for the setup phases, such as:

- Parameter setting
- Advanced adjustment of the various control loops
- Programming motion tasks
- Supervision

This software is available in two versions, for configuring Lexium 15 LP servodrives (Unilink L) and Lexium 15 MP/15 HP servodrives (Unilink MH).

It is supplied with the servodrive as standard.

| Configuration and adjustment software | «Unilink» for PC |
|---------------------------------------|---|
| Drives configuration | Lexium 15 |
| Environment | Microsoft Windows R |
| Language | English, French, German, Italian and Spanish |
| Contents | CD- Rom deliver with the product : Unilink software + documentation (1) |

(1) All the documentation on www.schneider-electric.com



| Servodrive type | | | Lexium 15 LP | | | | Lexium 15 HP | | | Lexium 15 HP | | | |
|-----------------|--------|----------|--------------------------------|-------|-------|---------------------|--------------|-------|---------------------|--------------|--------------------|--------|--------|
| | | | With EMC filters integrated | | | | | | | | | | |
| | | | 200...240V/1-phase and 3-phase | | | 208...480 V 3-phase | | | 208...480 V 3-phase | | 208...480V/3-phase | | |
| | | | LXM15L | | | LXM15M | | | LXM15H | | LXM15H | | |
| BSH... | Mo (1) | Nmax (2) | D13M3 | D21M3 | D28M3 | U60N4 | D10N4 | D17N4 | D28N4 | D40N4 | D56N4 | C11N4X | C20N4X |
| 0551 P | 0.5 | 3000 | 1.4 | | | 1.4 | | | | | | | |
| 0551 T | 0.5 | 7000 | 1.4 | | | | | | | | | | |
| 0552 M | 0.9 | 4000 | | | | 2.25 | | | | | | | |
| 0552 P | 0.9 | 4000 | 2.54 | | | | | | | | | | |
| 0552 T | 0.9 | 7000 | 2.7 | | | 2.26 | | | | | | | |
| 0553 M | 1.3 | 4000 | | | | 3.5 | | | | | | | |
| 0553 P | 1.3 | 7500 | 4.2 | | | | 3.87 | | | | | | |
| 0701 P | 1.41 | 3000 | 2.66 | 3.19 | | 2.66 | | | | | | | |
| 0701 T | 1.36 | 6000 | 3.19 | | | | 2.91 | | | | | | |
| 0702 M | 2.12 | 3000 | | | | 5.63 | | | | | | | |
| 0702 P | 2.12 | 7000 | 5.63 | | | | 4.85 | | | | | | |
| 0702 T | 2.12 | 6000 | | 5.45 | | | | 4.47 | | | | | |
| 0703 P | 2.83 | 6500 | | 9.28 | | | | 7.71 | | | | | |
| 0703 T | 2.83 | 5500 | | | 7.38 | | | | | | | | |
| 1001 P | 3.39 | 2500 | | 7.68 | | | 6.19 | | | | | | |
| 1001 T | 3.39 | 4000 | | | 8.5 | | | | | | | | |
| 1002 P | 5.52 | 5000 | | 14.79 | | | | 12.13 | | | | | |
| 1002 T | 5.52 | 4000 | | | 11.59 | | | | | | | | |
| 1003 M | 7.76 | 2000 | | | | | 23 | 22.95 | | | | | |
| 1003 P | 7.76 | 4500 | | | 19.69 | | | | 19.7 | 23.17 | | | |
| 1004 M | 9.31 | 2000 | | | | | 29.9 | 29.87 | | 33.83 | | | |
| 1004 P | 9.31 | 4000 | | | | | | | 23.6 | 33.83 | | | |
| 1004 T | 9.31 | 3500 | | | | | | | | 21.04 | | | |
| 1401 M | 11.4 | 1500 | | | | | | | 26 | | | | |
| 1401 P | 11.4 | 3000 | | | | | | | 23.3 | 23.33 | | | |
| 1401 T | 11.4 | 2520 | | | | | | | | 22.27 | 23.33 | | |
| 1402 M | 19.2 | 1500 | | | | | | | | 47.5 | | | |
| 1402 P | 19.2 | 3500 | | | | | | | | 39.33 | 47.5 | | |
| 1403 M | 25.4 | 1500 | | | | | | | | 71.67 | | | |
| 1403 P | 25.4 | 3500 | | | | | | | | | 57.2 | | |
| 1404 M | 32.1 | 1500 | | | | | | | | 82.32 | 95 | | |
| 2051 M | 36 | 1500 | | | | | | | | 68.33 | 68.33 | 68.33 | |
| 2051 P | 36 | 3000 | | | | | | | | | | 82 | |
| 2052 M | 65 | 1500 | | | | | | | | | | 200 | 200 |
| 2052 P | 65 | 2000 | | | | | | | | | | 118.54 | 193.45 |
| 2053 M | 90 | 1500 | | | | | | | | | | 227.18 | 300 |
| 2053 P | 90 | 2000 | | | | | | | | | | | 202.96 |

(1) Mo = Nominal torque in Nm

(2) N max = Maximum speed in rpm

1.4 = Value in Nm corresponding to the peak stall torque of servodrive-motor combination



| Servodrive type | | | Lexium 15 LP | | | | | | Lexium 15 MP | | |
|-----------------|--------|----------|--------------------------------|-------|-------|--------------------|-------|-------|--------------------|-------|-------|
| | | | With EMC filters integrated | | | | | | | | |
| | | | 200...240V/1-phase and 3-phase | | | 208...480V/3-phase | | | 208...480V/3-phase | | |
| | | | LXM15L | | | | | | LXM15M | | |
| BDH... | Mo (1) | Nmax (2) | D13M3 | D21M3 | D28M3 | U60N4 | D10N4 | D17N4 | D28N4 | D40N4 | D56N4 |
| 0401 B | 0.18 | 8000 | 0.61 | | | | | | | | |
| 0402 C | 0.31 | 8000 | 1.08 | | | | | | | | |
| 0403 C | 0.41 | 8000 | 1.46 | | | | | | | | |
| 0582 C | 0.84 | 7500 | | | | 2.34 | | | | | |
| 0582 E | 0.87 | 7000 | 2.42 | | | | | | | | |
| 0583 C | 1.13 | 6000 | | | | 3.2 | | | | | |
| 0583 D | 1.16 | 8000 | 3.84 | | | | 3.42 | | | | |
| 0583 F | 1.18 | 8000 | | 3.52 | | | | | | | |
| 0584 C | 1.38 | 5000 | | | | 3.94 | | | | | |
| 0584 D | 1.41 | 8000 | 4.76 | | | | 4.22 | | | | |
| 0584 F | 1.42 | 6500 | | 4.68 | | | | | | | |
| 0701 C | 1.15 | 5500 | | | | 3.34 | | | | | |
| 0701 E | 1.2 | 5500 | 3.24 | | | | | | | | |
| 0702 C | 2 | 3500 | | | | 5.74 | | | | | |
| 0702 D | 2.04 | 5500 | 7.05 | | | | 6.18 | | | | |
| 0702 H | 2.1 | 6500 | | 5.36 | | | | | | | |
| 0703 C | 2.71 | 2500 | | | | 7.83 | | | | | |
| 0703 E | 2.79 | 4500 | 8.95 | | | | 7.7 | | | | |
| 0703 H | 2.88 | 5000 | | 7.35 | | | | | | | |
| 0841 C | 1.95 | 3000 | | | | 5.12 | | | | | |
| 0841 E | 2.02 | 5500 | 5.33 | | | | 4.64 | | | | |
| 0841 H | 2.06 | 6000 | | 4.78 | | | | | | | |
| 0842 C | 3.35 | 3500 | | | | 9.37 | | | | | |
| 0842 E | 3.42 | 6000 | 9.72 | | | | 8.41 | | | | |
| 0842 G | 3.53 | 5500 | | 9.56 | | | | 7.99 | | | |
| 0842 J | 3.56 | 5500 | | | 7.75 | | | | 7.75 | | |
| 0843 E | 4.7 | 3000 | | | | | 11.7 | | | | |
| 0843 G | 4.8 | 5000 | | 13.2 | | | | 10.9 | | | |
| 0843 K | 4.9 | 5000 | | | 9.66 | | | | 9.66 | | |
| 0844 E | 5.76 | 2500 | | | | | 14.1 | | | | |
| 0844 G | 5.88 | 4500 | | 16.1 | | | | 13.3 | | | |
| 0844 J | 6 | 3500 | | | 12.9 | | | | 12.9 | | |
| 1081 E | 4.7 | 3000 | | | | | 10.9 | | | | |
| 1081 G | 4.75 | 5000 | | 11.7 | | | | 10.2 | | | |
| 1081 K | 4.9 | 5000 | | | 9.22 | | | | 9.22 | | |
| 1082 E | 8.34 | 2000 | | | | | 18.5 | | | | |
| 1082 G | 8.43 | 3000 | | 21.5 | | | | 18.9 | | | |
| 1082 K | 8.6 | 6000 | | | 16.9 | | | | 16.9 | | |
| 1082 M | 8.6 | 4000 | | | | | | | | 16.7 | |
| 1083 G | 11.4 | 2500 | | | | | | 25.8 | | | |
| 1083 K | 11.6 | 4500 | | | 22.9 | | | | 22.9 | | |
| 1083 M | 11.4 | 3000 | | | | | | | | 22.1 | |
| 1083 P | 11.4 | 5000 | | | | | | | | | 22.2 |
| 1084 G | 14.3 | 2000 | | | | | | 31.7 | | | |
| 1084 K | 14.4 | 2000 | | | 28.1 | | | | 28.1 | | |
| 1084 L | 14.1 | 4500 | | | | | | | | 29.5 | |
| 1084 N | 14.1 | 4000 | | | | | | | | | 29.6 |
| 1382 G | 11,9 | 2000 | | | | | | 25.6 | | | |
| 1382 K | 12,2 | 4500 | | | 30.1 | | | | 30.1 | | |



| Servodrive type | | | Lexium 15 LP | | | | | | Lexium 15 MP | | |
|-----------------|--------|----------|--------------------------------|-------|-------|--------------------|-------|-------|--------------------|-------|-------|
| | | | With EMC filters integrated | | | | | | | | |
| | | | 200...240V/1-phase and 3-phase | | | 208...480V/3-phase | | | 208...480V/3-phase | | |
| | | | LXM15L | | | | | | LXM15M | | |
| BDH... | Mo (1) | Nmax (2) | D13M3 | D21M3 | D28M3 | U60N4 | D10N4 | D17N4 | D28N4 | D40N4 | D56N4 |
| | 1382 M | 12.2 | 6000 | | | | | | | 22.8 | |
| 1382 P | 12.3 | 4000 | | | | | | | | | 23.2 |
| 1383 G | 16.5 | 1500 | | | | | | 38.4 | | | |
| 1383 K | 16.8 | 3500 | | | 31 | | | | 31 | | |
| 1383 M | 17 | 4500 | | | | | | | | 31.4 | |
| 1383 N | 17 | 5500 | | | | | | | | | 34.8 |
| 1384 K | 20.8 | 2500 | | | | | | | 41.2 | | |
| 1384 L | 21 | 3500 | | | | | | | | 41.9 | |
| 1384 P | 20.4 | 5000 | | | | | | | | | 40.2 |
| 1385 K | 24.8 | 2000 | | | | | | | 46.8 | | |
| 1385 M | 25 | 3000 | | | | | | | | 47.6 | |
| 1385 N | 24.3 | 4000 | | | | | | | | | 50.2 |
| 1882 K | 29.7 | 1500 | | | | | | | 59.4 | | |
| 1882 M | 30 | 2000 | | | | | | | | 59.8 | |
| 1882 P | 29.4 | 3000 | | | | | | | | | 58.4 |
| 1883 M | 42 | 1500 | | | | | | | | 80.7 | |
| 1883 P | 41.6 | 2500 | | | | | | | | | 79.4 |
| 1884 L | 53 | 1500 | | | | | | | | 108 | |
| 1884 P | 52.5 | 2000 | | | | | | | | | 106 |

(1) Mo = Nominal torque in Nm

(2) N max = Maximum speed in rpm

0.61 = Value in Nm corresponding to the peak stall torque of servodrive-motor combination

Lexium 05 & Lexium 15

Motion control BSH servomotors



To order a BSH motor, please use these references

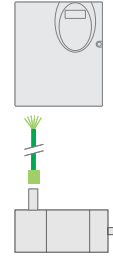
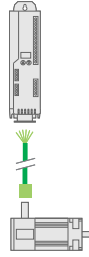
| Reference to be completed: | | BSH | ●●● | ● | ● | ● | ● | ● | ● | A |
|----------------------------------|---|-----|-----|---|---|---|---|---|---|---|
| Flange size | 55 mm | 055 | | | | | | | | |
| | 70 mm | 070 | | | | | | | | |
| | 100 mm | 100 | | | | | | | | |
| | 140 mm | 140 | | | | | | | | |
| | 205 mm | 205 | | | | | | | | |
| Length (Number of magnet stacks) | 1 | | | 1 | | | | | | |
| | 2 | | | 2 | | | | | | |
| | 3 | | | 3 | | | | | | |
| | 4 | | | 4 | | | | | | |
| Winding type | Lowest speed | | | | M | | | | | |
| | Medium speed | | | | P | | | | | |
| | Highest speed | | | | T | | | | | |
| Shaft (1) | w/o key (smooth) : IP40 (IP65) | | | | | 0 | | | | |
| | with key : IP40 (IP65) | | | | | 1 | | | | |
| | w/o key : IP65 | | | | | 2 | | | | |
| | with key IP65 | | | | | 3 | | | | |
| Encoder | Absolute SinCos, single turn (128 periods per revolution) | | | | | | 1 | | | |
| | Absolute SinCos multi turn (4096 revolutions) | | | | | | 2 | | | |
| Brake | w/o brake | | | | | | | A | | |
| | with brake | | | | | | | F | | |
| Connection System | Straight connector | | | | | | | | 1 | |
| | right angle turnable connector | | | | | | | | 2 | |
| Mounting | International standard mounting | | | | | | | | | A |

BDH servomotors

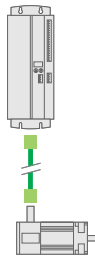
To order a BDH motor, please use these references

| Reference to be completed: | | BDH | ●●● | ● | ● | ● | ● | ● | ● | ● |
|----------------------------------|---|----------|-----|---|-----|---|---|---|---|---|
| Flange size | 40 mm | 040 | | | | | | | | |
| | 58 mm | 058 | | | | | | | | |
| | 70 mm | 070 | | | | | | | | |
| | 84 mm | 084 | | | | | | | | |
| | 108 mm | 108 | | | | | | | | |
| | 138 mm | 138 | | | | | | | | |
| | 188 mm | 188 | | | | | | | | |
| Length (Number of magnet stacks) | 1 | | | 1 | | | | | | |
| | 2 | | | 2 | | | | | | |
| | 3 | | | 3 | | | | | | |
| | 4 | | | 4 | | | | | | |
| | 5 | | | 5 | | | | | | |
| Winding type | | | | | AaZ | | | | | |
| | | | | | | | | | | |
| Shaft end | IP 54 | Untapped | | | | 0 | | | | |
| | | Keyed | | | | 1 | | | | |
| | IP 67 | Untapped | | | | 2 | | | | |
| | | Keyed | | | | 3 | | | | |
| Integrated sensor | Single turn, SinCos Hiperface® 4096 points/turn | | | | | | 1 | | | |
| | Multiturn, SinCos Hiperface® 4096 points/turn, 4096 turns | | | | | | 2 | | | |
| | 2-pole resolver | | | | | | 5 | | | |
| Holding brake | None | | | | | | | A | | |
| | With | | | | | | | F | | |
| Connection | Angled connectors that can be rotated through 90° | | | | | | | | | |
| Flange | International IEC standard | | | | | | | | 2 | A |
| | NEMA | | | | | | | | | |

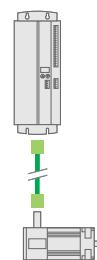
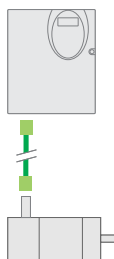
(1) Other possibilities to be detailed: see www.schneider-electric.com



| Cable type | | Power cable fitted with 1 connector (servomotor side) | | | | |
|-----------------|--------|---|-----------------------|---|---|------------------|
| Servomotor type | BSH | 055●● / 070●● / 100●● | 1401T / 1403P / 1404P | 2051M | 2051P | |
| | | 1401P / 1402M / 1402P / 1403M / 1404M | | 1402T | | |
| | BDH | 040●●/058●●/070●●/ 084●●/108●E/108●G/ 108●K/138●G/138●K | | | | |
| Servodrive type | | LXM05 All type | LXM15 L..... | LXM05 D42M3X / D57N4 | LXM05 D57N4 | LXM15 HC..N4X |
| Composition | | 4x1.5 mm ² + 2x1 mm ² | | 4x2.5 mm ² + 2x1 mm ² | 4x4 mm ² + 2x1 mm ² | |
| Reference | L = 3 | VW3M5101R30 | VW3M5101R30 | VW3M5102R30 | VW3M5103R30 | |
| | L = 5 | VW3M5101R50 | VW3M5101R50 | VW3M5102R50 | VW3M5103R50 | |
| | L = 10 | VW3M5101R100 | VW3M5101R100 | VW3M5102R100 | VW3M5103R100 | |
| | L = 15 | VW3M5101R150 | VW3M5101R150 | VW3M5102R150 | VW3M5103R150 | |
| | L = 20 | VW3M5101R200 | VW3M5101R200 | VW3M5102R200 | VW3M5103R200 | |
| | L = 25 | VW3M5101R250 | VW3M5101R250 | VW3M5102R250 | VW3M5103R250 | |
| | L = 50 | VW3M5101R500 | VW3M5101R500 | VW3M5102R500 | VW3M5103R500 | |
| | L = 75 | VW3M5101R750 | – | VW3M5102R750 | VW3M5103R750 | |



| Cable type | | Power cable fitted with 2 connectors | | | | |
|-----------------|---------|---|---|---|---|--|
| Servomotor type | BSH | 1003P / 1004● / 1401M / 1401P / 1402M / 1402P / 1403M / 1404M | 1401T / 1403P / 1404P | 1402T / 2051M / 2051P | | 2052M / 2052P / 2053M / 2053P |
| | | BDH | 084●● / 108●K / 138●K / 188●K | 108●L / 108●M / 138●L / 138●M / 188●L / 188●M | | 108●N / 108●P / 138●N / 138●P / 188●P |
| Servodrive type | | LXM15 MD..N4 | | | | LXM15 HC..N4X |
| Composition | | 4x1.5 mm ² + 2x1 mm ² | 4x2.5 mm ² + 2x1 mm ² | 4x4 mm ² + 2x1 mm ² | 4x4 mm ² + 2x1 mm ² | 4x10 mm ² + 2x1 mm ² |
| Reference | L = 3 | VW3M5201R30 | VW3M5202R30 | VW3M5203R30 | VW3M5213R30 | – |
| | L = 5 | VW3M5201R50 | VW3M5202R50 | VW3M5203R50 | VW3M5213R50 | – |
| | L = 10 | VW3M5201R100 | VW3M5202R100 | VW3M5203R100 | VW3M5213R100 | VW3M5304R100 |
| | L = 15 | VW3M5201R150 | VW3M5202R150 | VW3M5203R150 | VW3M5213R150 | – |
| | L = 20 | VW3M5201R200 | VW3M5202R200 | VW3M5203R200 | VW3M5213R200 | VW3M5304R200 |
| | L = 25 | VW3M5201R250 | VW3M5202R250 | VW3M5203R250 | VW3M5213R250 | – |
| | L = 50 | VW3M5201R500 | VW3M5202R500 | VW3M5203R500 | VW3M5213R500 | VW3M5304R500 |
| | L = 75 | VW3M5201R750 | VW3M5202R750 | VW3M5203R750 | VW3M5213R750 | – |
| | L = 100 | – | – | – | – | VW3M5304R1000 |



| Cable type | | Encoder cable SinCos Hiperface fitted with 2 connectors | | Resolver cable fitted with 2 connectors |
|-----------------|--------|--|---|---|
| Servomotor type | BSH | All type | All type | All type |
| | BDH | – | All type | All type |
| Servodrive type | | LXM05 All type | LXM15 All type | LXM15 All type |
| Composition | | 5x(2x2.5 mm ²) + 2x0.5 mm ² | 5x(2x0.25 mm ²) + 2x0.5 mm ² | 5x(2x0.25 mm ²) + 2x0.5 mm ² |
| Reference | L = 3 | VW3M8101R30 | VW3M8301R30 | VW3M8401R30 |
| | L = 5 | VW3M8101R50 | VW3M8301R50 | VW3M8401R50 |
| | L = 10 | VW3M8101R100 | VW3M8301R100 | VW3M8401R100 |
| | L = 15 | VW3M8101R150 | VW3M8301R150 | VW3M8401R150 |
| | L = 20 | VW3M8101R200 | VW3M8301R200 | VW3M8401R200 |
| | L = 25 | VW3M8101R250 | VW3M8301R250 | VW3M8401R250 |
| | L = 50 | VW3M8101R500 | VW3M8301R500 | VW3M8401R500 |
| | L = 75 | VW3M8101R750 | VW3M8301R750 | VW3M8401R750 |

Connection elements

| Connection type | | Power cable | | | Control cable SinCos Hiperface |
|-----------------|---------|---|---|---|-----------------------------------|
| Servomotor type | | BSH All type | | | |
| Servodrive type | | LXM05 All type | | | |
| Composition | | 4x1.5 mm ² + 2x1 mm ² | 4x2.5 mm ² + 2x1 mm ² | 4x4 mm ² + 2x1 mm ² | |
| Reference | L = 25 | VW3 M5 301 R250 | VW3 M5 302 R250 | VW3 M5 303 R250 | VW3 M8 221 R250 |
| | L = 50 | VW3 M5 301 R500 | VW3 M5 302 R500 | VW3 M5 303 R500 | VW3 M8 221 R500 |
| | L = 100 | VW3 M5 301 R1000 | VW3 M5 302 R1000 | VW3 M5 303 R1000 | VW3 M8 221 R1000 |

| Connection type | | | Connector | |
|--------------------|---------------|---------------------|------------|------------|
| | | | BSH end | LXM 05 end |
| Power connection | cross-section | 1.5 mm ² | VW3 M8 215 | – |
| | | 2.5 mm ² | VW3 M8 216 | – |
| | | 4 mm ² | VW3 M8 217 | – |
| Control connection | | | VW3 M8 213 | VW3 M8 214 |



Schneider Electric has selected GBX gearboxes made by Neugart to be used in association with the BSH and BDH servomotor ranges.

As their association with BSH or BDH servomotors has been fully qualified and they are very easy to mount, the gearboxes are simple to put into operation and risk free.

Available in 5 sizes (GBX 40... GBX 160), the planetary gearboxes are offered in 12 gear ratios (3:1...40:1).

To order a GBX planetary gearbox, complete each reference with

| Reference to be completed: | | GBX | ●●● | ●●● | ●●● | ● | ● |
|------------------------------|-----------------------|---------|-----------------|-----|-----|---|---|
| Size (Junction box diameter) | 40 mm | 040 | | | | | |
| | 60 mm | 060 | | | | | |
| | 80 mm | 080 | | | | | |
| | 115 mm | 120 | | | | | |
| | 160 mm | 160 | | | | | |
| Speed reduction ratio | 3:1 | 003 | | | | | |
| | 4:1 | | 004 | | | | |
| | 5:1 | | 005 | | | | |
| | 8:1 | | 008 | | | | |
| | 9:1 | | 009 | | | | |
| | 12:1 | | 012 | | | | |
| | 15:1 | | 015 | | | | |
| | 16:1 | | 016 | | | | |
| | 20:1 | | 020 | | | | |
| | 25:1 | | 025 | | | | |
| | 32:1 | | 032 | | | | |
| | 40:1 | | 040 | | | | |
| Servomotor | Associated BDH | Type | BDH 040 | | 040 | | |
| | | BDH 058 | | 058 | | | |
| | | BDH 070 | | 070 | | | |
| | | BDH 084 | | 084 | | | |
| | | BDH 108 | | 108 | | | |
| | | BDH 138 | | 138 | | | |
| | Associated BSH | Type | BSH 055 | | 055 | | |
| | | BSH 070 | | 070 | | | |
| | | BSH 100 | | 100 | | | |
| | | BSH 140 | | 140 | | | |
| | | BSH 205 | | (1) | | | |
| | | Model | BSH ou BDH ●●●1 | | | | 1 |
| | BSH ou BDH ●●●2 | | | | | 2 | |
| | BSH ou BDH ●●●3 | | | | | 3 | |
| | BSH ou BDH ●●●4 | | | | | 4 | |
| | BDH ●●●5 | | | | | 5 | |
| | Servomotor adaptation | | BDH | | | | D |
| | | | BSH | | | | F |

(1) Consult your Schneider Electric agency

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