

# Product data sheet

Specifications



## integrated drive ILS with stepper motor - 24..48 V - Ethernet Powerlink - 6 A

ILS2P853TB1F0

⚠ To be discontinued on: 31 December 2022

⚠ To be end-of-service on: 31 December 2026

⚠ To be discontinued

### Main

|                           |                                          |
|---------------------------|------------------------------------------|
| Range of product          | Lexium integrated drive                  |
| Product or component type | Motion integrated drive                  |
| Device short name         | ILS                                      |
| Motor type                | 3-phase stepper motor                    |
| Number of motor poles     | 6                                        |
| Network number of phases  | Single phase                             |
| [Us] rated supply voltage | 24 V<br>48 V                             |
| Network type              | DC                                       |
| Communication interface   | Ethernet Powerlink, integrated           |
| Length                    | 247.3 mm                                 |
| Winding type              | High speed of rotation and medium torque |
| Electrical connection     | Printed circuit board connector          |
| Holding brake             | With                                     |
| Gear box type             | Without                                  |
| Nominal speed             | 200 rpm at 24 V<br>400 rpm at 48 V       |
| Nominal torque            | 4.5 N.m                                  |
| Holding torque            | 6 N.m holding brake<br>4.5 N.m           |

### Complementary

|                          |           |
|--------------------------|-----------|
| Transmission rate        | 100 Mbits |
| Mounting support         | Flange    |
| Motor flange size        | 85 mm     |
| Number of motor stacks   | 3         |
| Centring collar diameter | 60 mm     |
| Centring collar depth    | 2 mm      |
| Number of mounting holes | 4         |
| Mounting holes diameter  | 6.5 mm    |

|                                       |                                                                                      |
|---------------------------------------|--------------------------------------------------------------------------------------|
| Circle diameter of the mounting holes | 99 mm                                                                                |
| Feedback type                         | Index pulse                                                                          |
| Shaft end                             | Untapped                                                                             |
| Second shaft                          | Without second shaft end                                                             |
| Shaft diameter                        | 14 mm                                                                                |
| Shaft length                          | 30 mm                                                                                |
| Supply voltage limits                 | 18...55 V                                                                            |
| Current consumption                   | 6000 mA maximum continuous                                                           |
| Associated fuse rating                | 16 A                                                                                 |
| Commissioning interface               | RS485 Modbus TCP (9.6, 19.2 and 38.4 kbauds)                                         |
| Input/Output type                     | 4 signals (each be used as input or output)                                          |
| Voltage state 0 guaranteed            | -3...4.5 V                                                                           |
| Voltage state 1 guaranteed            | 15...30 V                                                                            |
| Discrete input current                | 10 mA at 24 V for safety input<br>2 mA at 24 V for 24 V signal interface             |
| Discrete output voltage               | 23...25 V                                                                            |
| Maximum switching current             | 100 mA per output<br>200 mA total                                                    |
| Protection type                       | Safe torque off<br>Short circuit of the output voltage<br>Overload of output voltage |
| Peak stall torque                     | 4.5 N.m                                                                              |
| Continuous stall torque               | 4.5 N.m                                                                              |
| Speed feedback resolution             | 20000 points/turn                                                                    |
| Accuracy error                        | +/- 6 arc min                                                                        |
| Rotor inertia                         | 3.5 kg.cm²                                                                           |
| Maximum mechanical speed              | 3000 rpm                                                                             |
| Maximum radial force Fr               | 110 N                                                                                |
| Maximum axial force Fa                | 170 N (tensile force)<br>30 N (force pressure)                                       |
| Service life in hours                 | 20000 h bearing                                                                      |
| Brake pull-in power                   | 22 W                                                                                 |
| Brake release time                    | 40 ms                                                                                |
| Brake application time                | 20 ms                                                                                |
| Marking                               | CE                                                                                   |
| Type of cooling                       | Natural convection                                                                   |
| Net weight                            | 6.5 kg                                                                               |

## Environment

|                        |                                                                                                                                               |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Standards              | EN 61800-3 : 2001-02<br>IEC 61800-3, Ed 2<br>EN/IEC 61800-3<br>EN 50347<br>IEC 60072-1<br>EN/IEC 50178<br>EN 61800-3:2001, second environment |
| Product certifications | cUL<br>UL<br>TÜV                                                                                                                              |

|                                                       |                                                                                                                   |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Ambient air temperature for operation                 | 40...55 °C (with power derating of 2 % per °C)<br>0...40 °C (without derating)                                    |
| Permissible ambient air temperature around the device | 105 °C power amplifier<br>110 °C motor                                                                            |
| Ambient air temperature for storage                   | -25...70 °C                                                                                                       |
| Operating altitude                                    | <= 1000 m without derating                                                                                        |
| Relative humidity                                     | 15...85 % without condensation                                                                                    |
| Vibration resistance                                  | 20 m/s² (f= 10...500 Hz) 10 cycles conforming to EN/IEC 60068-2-6                                                 |
| Shock resistance                                      | 150 m/s² 1000 shocks conforming to EN/IEC 60068-2-29                                                              |
| IP degree of protection                               | IP41 shaft bushing: conforming to EN/IEC 60034-5<br>IP54 total except shaft bushing: conforming to EN/IEC 60034-5 |

### Packing Units

|                              |         |
|------------------------------|---------|
| Unit Type of Package 1       | PCE     |
| Number of Units in Package 1 | 1       |
| Package 1 Height             | 10.4 cm |
| Package 1 Width              | 18.0 cm |
| Package 1 Length             | 36.5 cm |
| Package 1 Weight             | 6.2 kg  |

### Offer Sustainability

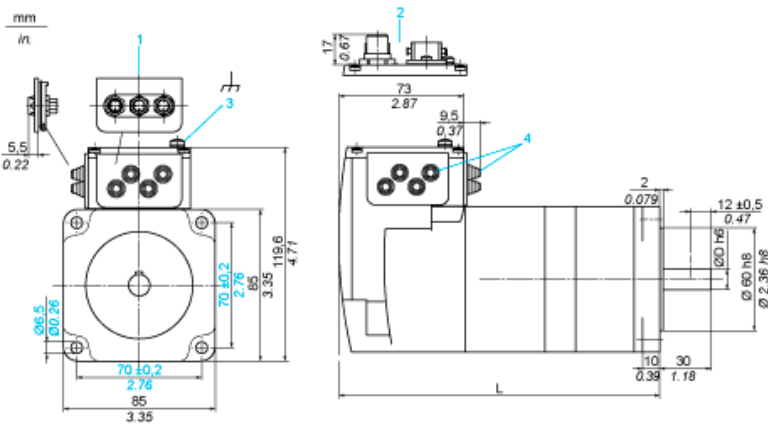
|                            |                                                                                                                                                                                                                                                                                             |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status   | Green Premium product                                                                                                                                                                                                                                                                       |
| REACH Regulation           | <a href="#">REACH Declaration</a>                                                                                                                                                                                                                                                           |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope)<br><a href="#">EU RoHS Declaration</a>                                                                                                                                                                                           |
| Mercury free               | Yes                                                                                                                                                                                                                                                                                         |
| RoHS exemption information | <a href="#">Yes</a>                                                                                                                                                                                                                                                                         |
| China RoHS Regulation      | <a href="#">China RoHS declaration</a>                                                                                                                                                                                                                                                      |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>                                                                                                                                                                                                                                               |
| Circularity Profile        | <a href="#">End of Life Information</a>                                                                                                                                                                                                                                                     |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins                                                                                                                                                                 |
| California proposition 65  | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> |

### Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|

Integrated Drive with Holding Brake

Dimensions

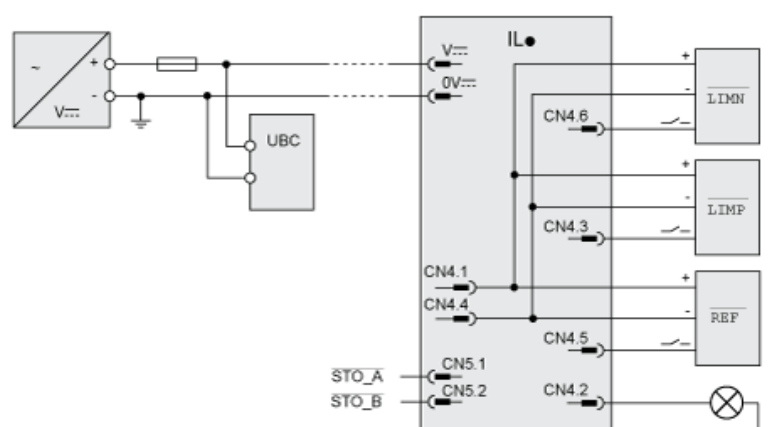


- 1 Accessories: I/O signal insert with industrial connectors
- 2 Option: industrial connectors
- 3 Earth (ground) terminal
- 4 Accessories: cable entries  $\varnothing = 3 \dots 9 \text{ mm}/0.12 \dots 0.35 \text{ in.}$
- L 247.3 mm/9.74 in.
- D 14 mm/0.55 in.

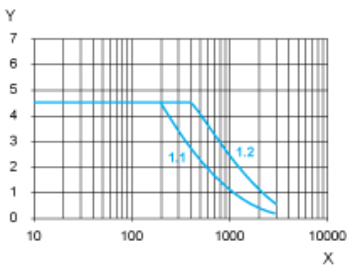
## Connections and Schema

**ILS2P853TB1F0**

### Connection Example with 4 I/O Signals



Torque Characteristics



- XSpeed of rotation in rpm
- YTorque in Nm
- 1.1Max. torque at 24 V
- 1.2Max. torque at 48 V

Recommended replacement(s)

ILS2P853TB1F0 is replaced by the following product range:



Lexium ILA, ILE, ILS

Integrated drives for motion control

Products: 653