

# Product data sheet

Specifications



brushless dc motor 24..36 V -  
CANopen DS301 interface - L = 174  
mm - 18:1

ILE1F661PB1A1

## Main

|                           |  |
|---------------------------|--|
| Range of product          | Lexium integrated drive                    |
| Product or component type | Motion integrated drive                    |
| Device short name         | ILE  |
| Motor type                | Brushless DC motor                         |
| Number of motor poles     | 6  |
| Network number of phases  | Single phase                               |
| [Us] rated supply voltage | 36 V<br>24 V                               |
| Network type              | DC   |
| Communication interface   | CANopen DS301, integrated                  |
| Length                    | 174 mm                                     |
| Winding type              | Medium speed of rotation and medium torque |
| Electrical connection     | Printed circuit board connector            |
| Holding brake             | Without                                    |
| Gear box type             | Straight teeth gear, 3 stages              |
| Reduction ratio           | 18:1 (160:9)                               |
| Nominal speed             | 225 rpm at 24 V<br>270 rpm at 36 V         |
| Nominal torque            | 3.1 N.m at 24 V<br>3.5 N.m at 36 V         |

## Complementary

|                          |   |
|--------------------------|---|
| Transmission rate        | 50, 100, 125, 250, 500, 800 and 1000 kbauds |
| Mounting support         | Flange                                      |
| Motor flange size        | 66 mm                                       |
| Number of motor stacks   | 1   |
| Centring collar diameter | 16 mm                                       |
| Centring collar depth    | 4 mm  |
| Number of mounting holes | 4   |
| Mounting holes diameter  | 4.4 mm                                      |

|  |   |
|--|---|
| <b>Circle diameter of the mounting holes</b> | 73.54 mm  |
| <b>Feedback type</b>                         | BLDC encoder  |
| <b>Shaft end</b>                             | Keyed   |
| <b>Second shaft</b>                          | Without second shaft end  |
| <b>Shaft diameter</b>                        | 10 mm   |
| <b>Shaft length</b>                          | 25 mm   |
| <b>Key width</b>                             | 16 mm   |
| <b>Supply voltage limits</b>                 | 18...40 V   |
| <b>Current consumption</b>                   | 7000 mA peak<br>5500 mA maximum continuous  |
| <b>Associated fuse rating</b>                | 10 A  |
| <b>Input/Output type</b>                     | 4 signals (each be used as input or output)   |
| <b>Voltage state 0 guaranteed</b>            | -3...4.5 V  |
| <b>Voltage state 1 guaranteed</b>            | 15...30 V   |
| <b>Discrete input current</b>                | 10 mA at 24 V on/STO_A for safety input<br>3 mA at 24 V on/STO_B for safety input<br>2 mA at 24 V for 24 V signal interface |
| <b>Discrete output voltage</b>               | 23...25 V   |
| <b>Maximum switching current</b>             | 100 mA per output<br>200 mA total   |
| <b>Protection type</b>                       | Overload of output voltage<br>Safe torque off<br>Short circuit of the output voltage  |
| <b>Maximum supply current</b>                | 0.06 A at 36 V (power stage disabled)<br>0.1 A at 24 V (power stage disabled)<br>4 A at 36 V<br>4.5 A at 24 V               |
| <b>Nominal output power</b>                  | 74 W at 24 V<br>98 W at 36 V  |
| <b>Peak stall torque</b>                     | 3.74 N.m at 24 V<br>5.18 N.m at 36 V  |
| <b>Continuous stall torque</b>               | 4.3 N.m   |
| <b>Detent torque</b>                         | 1.1 N.m   |
| <b>Speed feedback resolution</b>             | 1.667° gearbox output<br>12 points/turn motor   |
| <b>Accuracy error</b>                        | +/- 1 point   |
| <b>Maximum torsional backlash</b>            | 1 °   |
| <b>Rotor inertia</b>                         | 48 kg.cm <sup>2</sup>   |
| <b>Maximum mechanical speed</b>              | 281 rpm   |
| <b>Maximum radial force Fr</b>               | 200 N (long-term operation)<br>200 N (short-term operation)   |
| <b>Maximum axial force Fa</b>                | 10 N (long-term operation)<br>80 N (short-term operation)   |
| <b>Service life in hours</b>                 | 2500 h bearing short-term operation<br>15000 h bearing long-term operation  |
| <b>Marking</b>                               | CE  |
| <b>Type of cooling</b>                       | Natural convection  |
| <b>Net weight</b>                            | 1.85 kg   |

## Environment

|                  |                                      |
|------------------|--------------------------------------|
| <b>Standards</b> | EN 61800-3 : 2001-02<br>EN/IEC 50178 |
|------------------|--------------------------------------|

EN/IEC 61800-3  
 EN 50347  
 EN 61800-3:2001, second environment  
 IEC 61800-3, Ed 2  
 IEC 60072-1

|  |   |
|--|---|
| <b>Product certifications</b>                                | cUL<br>TÜV<br>UL  |
| <b>Ambient air temperature for operation</b>                 | 50...65 °C (with power derating of 2 % per °C)<br>0...50 °C (without derating)                                    |
| <b>Permissible ambient air temperature around the device</b> | 105 °C power amplifier<br>110 °C motor  |
| <b>Ambient air temperature for storage</b>                   | -25...70 °C   |
| <b>Operating altitude</b>                                    | <= 1000 m without derating  |
| <b>Relative humidity</b>                                     | 15...85 % without condensation  |
| <b>Vibration resistance</b>                                  | 20 m/s <sup>2</sup> (f= 10...500 Hz) 10 cycles conforming to EN/IEC 60068-2-6                                     |
| <b>Shock resistance</b>                                      | 150 m/s <sup>2</sup> 1000 shocks conforming to EN/IEC 60068-2-29  |
| <b>IP degree of protection</b>                               | IP41 shaft bushing: conforming to EN/IEC 60034-5<br>IP54 total except shaft bushing: conforming to EN/IEC 60034-5 |

## Packing Units

|                                     |           |
|-------------------------------------|-----------|
| <b>Unit Type of Package 1</b>       | PCE       |
| <b>Number of Units in Package 1</b> | 1         |
| <b>Package 1 Weight</b>             | 2.276 kg  |
| <b>Package 1 Height</b>             | 11 cm     |
| <b>Package 1 width</b>              | 18.6 cm   |
| <b>Package 1 Length</b>             | 39.4 cm   |
| <b>Unit Type of Package 2</b>       | P06       |
| <b>Number of Units in Package 2</b> | 24        |
| <b>Package 2 Weight</b>             | 63.124 kg |
| <b>Package 2 Height</b>             | 77 cm     |
| <b>Package 2 width</b>              | 60 cm     |
| <b>Package 2 Length</b>             | 80 cm     |

## Offer Sustainability

|                                   |   |
|-----------------------------------|---|
| <b>Sustainable offer status</b>   | Green Premium product   |
| <b>REACH Regulation</b>           | <a href="#">REACH Declaration</a>   |
| <b>EU RoHS Directive</b>          | Pro-active compliance (Product out of EU RoHS legal scope)<br><a href="#">EU RoHS Declaration</a>   |
| <b>Mercury free</b>               | Yes   |
| <b>RoHS exemption information</b> | <a href="#">Yes</a>   |
| <b>China RoHS Regulation</b>      | <a href="#">China RoHS declaration</a>  |
| <b>Environmental Disclosure</b>   | <a href="#">Product Environmental Profile</a>   |
| <b>Circularity Profile</b>        | <a href="#">End of Life Information</a>   |
| <b>WEEE</b>                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins   |
| <b>PVC free</b>                   | Yes   |
| <b>California proposition 65</b>  | 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> |

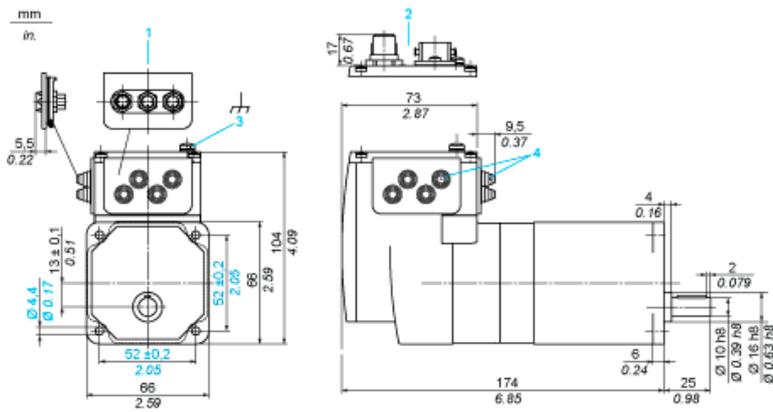
# Contractual warranty

Warranty

18 months

Integrated Drive with Straight Teeth Gear

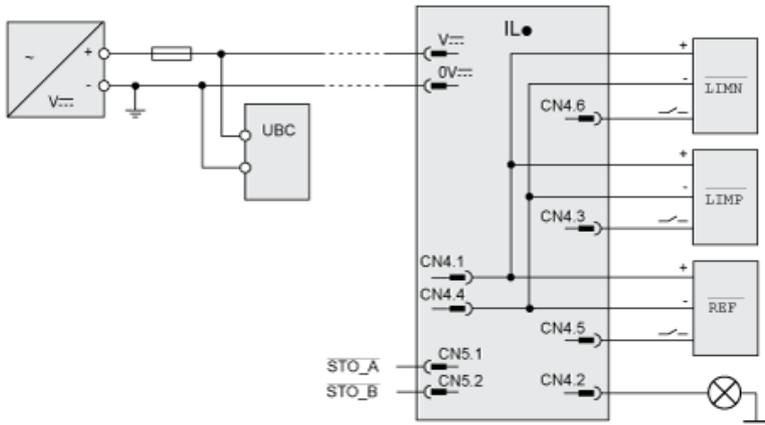
Dimensions



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

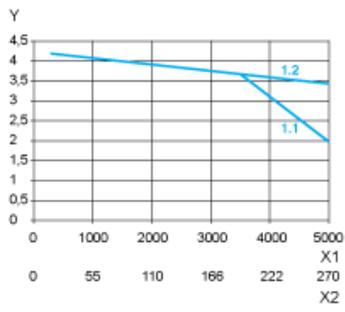
## Connection Example with 4 I/O Signals

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**Torque Characteristics**

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- X1** Speed of rotation of motor in rpm
- X2** Speed of rotation of gearing in rpm
- Y** Torque in Nm
- 1.1** Max. torque at 24 V
- 1.2** Max. torque at 36 V