

# ILE2E661PC1A3

brushless DC motor, Lexium ILA ILE ILS,  
24..48V- EtherCAT interface, L = 174mm, 54:1



## 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 | 48 V<br>24 V                               |
| Network type              | DC                                         |
| Communication interface   | EtherCAT, integrated                       |
| Length                    | 174 mm                                     |
| Winding type              | Medium speed of rotation and medium torque |
| Electrical connection     | Industrial connector                       |
| Holding brake             | Without                                    |
| Gear box type             | Straight teeth gear, 4 stages              |
| Reduction ratio           | 54:1 (490:9)                               |
| Nominal speed             | 73 rpm at 24 V<br>92 rpm at 48 V           |
| Nominal torque            | 10 N.M at 24 V<br>10 N.m at 48 V           |

## Complementary

|                                       |                                              |
|---------------------------------------|----------------------------------------------|
| Transmission rate                     | 100 Mbits                                    |
| 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                                       |
| Circle diameter of the mounting holes | 73.54 mm                                     |
| Feedback type                         | BLDC encoder                                 |
| Shaft end                             | Keyed                                        |
| Second shaft                          | Without second shaft end                     |
| Shaft diameter                        | 10 mm                                        |
| Shaft length                          | 25 mm                                        |
| Key width                             | 16 mm                                        |
| Supply voltage limits                 | 18...55.2 V                                  |
| Current consumption                   | 7000 mA peak<br>5500 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 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 |
| Discrete output voltage    | 23...25 V                                                                                                                   |
| Maximum switching current  | 100 MA per output<br>200 mA total                                                                                           |
| Protection type            | Overload of output voltage<br>Short circuit of the output voltage<br>Safe torque off                                        |
| Maximum supply current     | 0.1 A (power stage disabled)<br>6.8 A at 24 V<br>3.8 A at 48 V                                                              |
| Nominal output power       | 112 W at 48 V<br>90 W at 24 V                                                                                               |
| Peak stall torque          | 20.9 N.M at 24 V<br>20.9 N.m at 48 V                                                                                        |
| Continuous stall torque    | 11.6 N.m                                                                                                                    |
| Detent torque              | 4.36 N.m                                                                                                                    |
| Speed feedback resolution  | 12 points/turn motor<br>0.55° gearbox output                                                                                |
| Accuracy error             | +/- 0.5 point                                                                                                               |
| Maximum torsional backlash | 1 °                                                                                                                         |
| Rotor inertia              | 441 kg.cm <sup>2</sup>                                                                                                      |
| Maximum mechanical speed   | 92 rpm                                                                                                                      |
| Maximum radial force Fr    | 200 N (long-term operation)<br>200 N (short-term operation)                                                                 |
| Maximum axial force Fa     | 10 N (long-term operation)<br>80 N (short-term operation)                                                                   |
| Service life in hours      | 2500 H bearing short-term operation<br>15000 h bearing long-term operation                                                  |
| Marking                    | CE                                                                                                                          |
| Type of cooling            | Natural convection                                                                                                          |
| Net weight                 | 1.85 kg                                                                                                                     |

## Environment

|                                                       |                                                                                                                                               |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Standards                                             | IEC 61800-3, Ed 2<br>EN/IEC 61800-3<br>EN/IEC 50178<br>EN 61800-3:2001, second environment<br>EN 61800-3 : 2001-02<br>EN 50347<br>IEC 60072-1 |
| Product certifications                                | UL[RETURN]TÜV[RETURN]cUL                                                                                                                      |
| 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/s <sup>2</sup> (f= 10...500 Hz) 10 cycles conforming to EN/IEC 60068-2-6                                                                 |
| Shock resistance                                      | 150 m/s <sup>2</sup> 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             | 8.0 cm  |
| Package 1 Width              | 18.5 cm |
| Package 1 Length             | 35.5 cm |
| Package 1 Weight             | 2.32 kg |

## Offer Sustainability

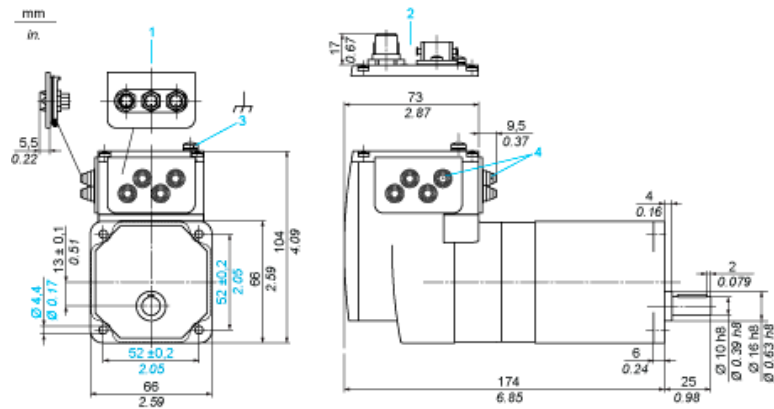
|                            |                                                                                                                                 |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 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)                                                                      |
| Mercury free               | Yes                                                                                                                             |
| China RoHS Regulation      | <a href="#"> China RoHS Declaration</a>        |
| RoHS exemption information | <a href="#"> Yes</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     |
| PVC free                   | Yes                                                                                                                             |

## Contractual warranty

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

Integrated Drive with Straight Teeth Gear

Dimensions

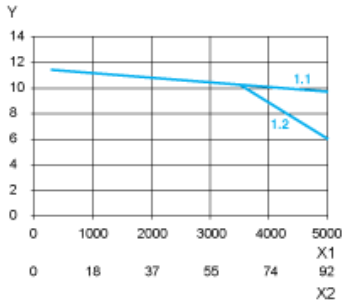


- 1 Accessories: I/O signal insert with industrial connectors
- 2 Option: industrial connectors
- 3 Earth (ground) terminal
- 4 Accessories: cable entries  $\varnothing = 3 \dots 9 \text{ mm} / 0.12 \dots 0.35 \text{ in.}$

## Connection Example with 4 I/O Signals



Torque Characteristics



- 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