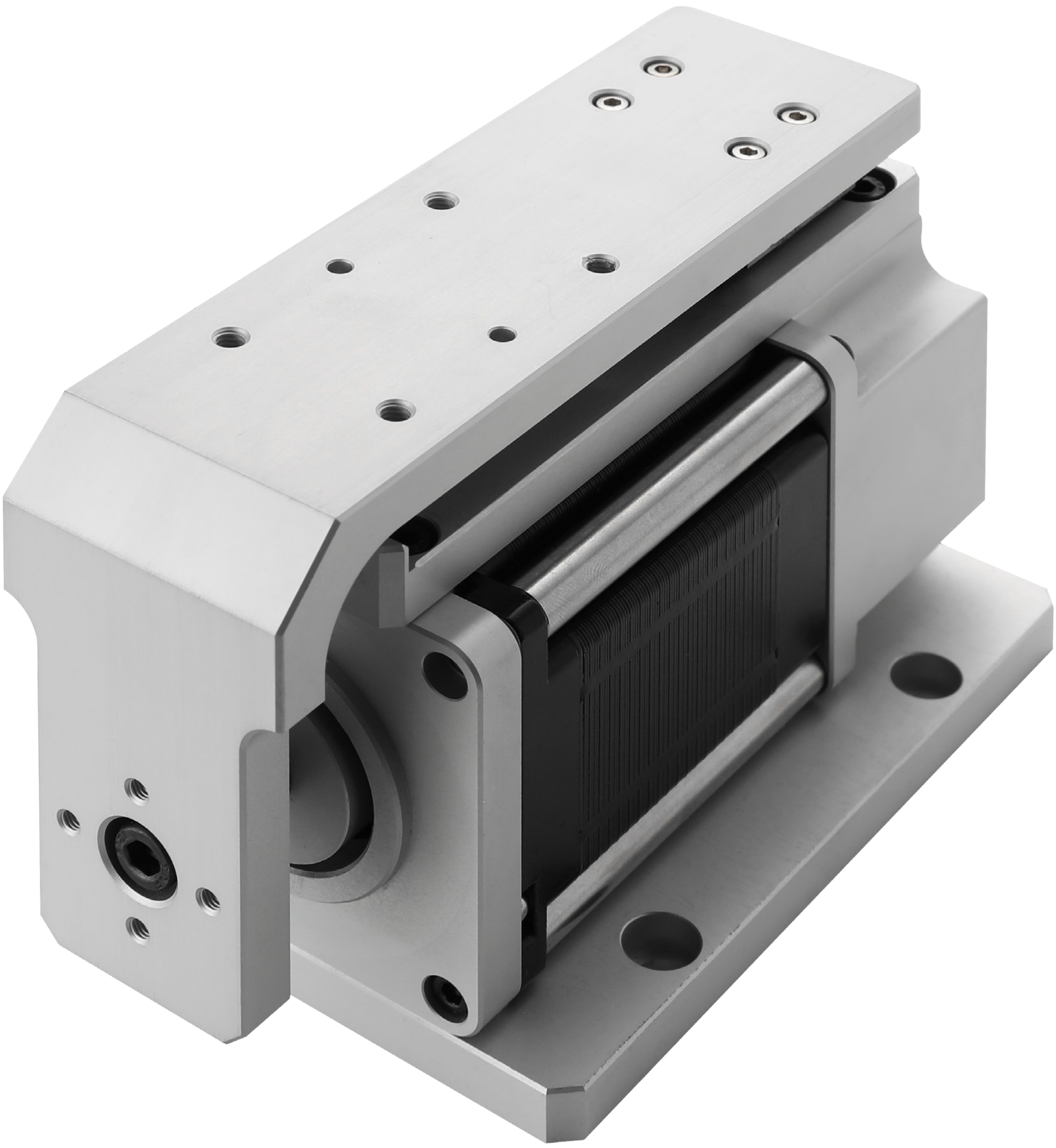
# ELA SERIES

***Erae-tech Linear Actuator Series***



ERAETECH

# ELA SERIES

***Erae-tech Linear Actuator Series***

01

Small size linear actuator

02

Open Loop/ Closed Loop optional

03

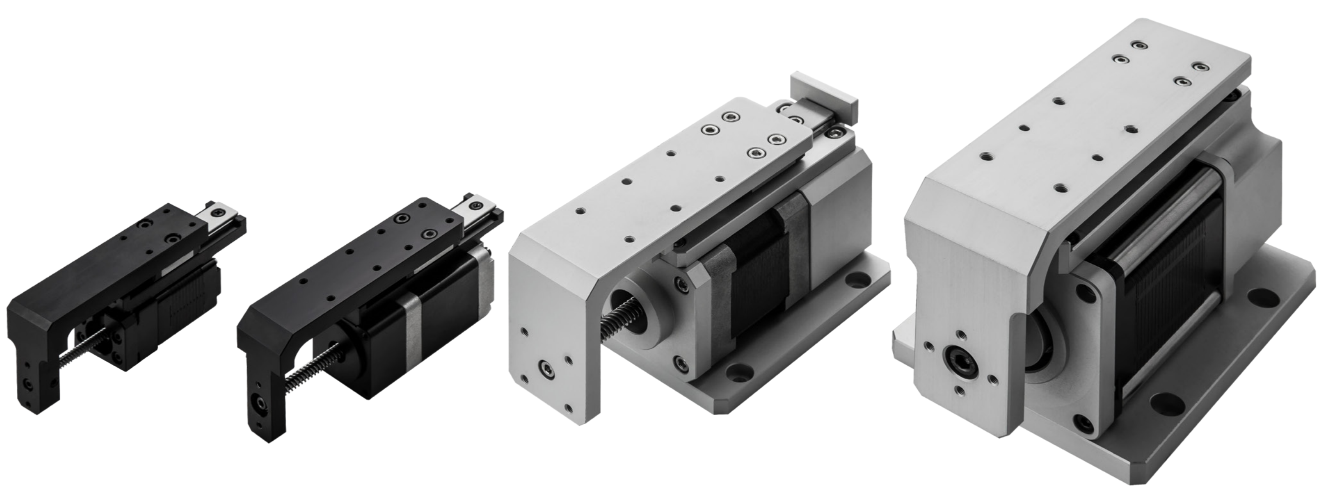
High rigidity LM guide

04

With many types of drives

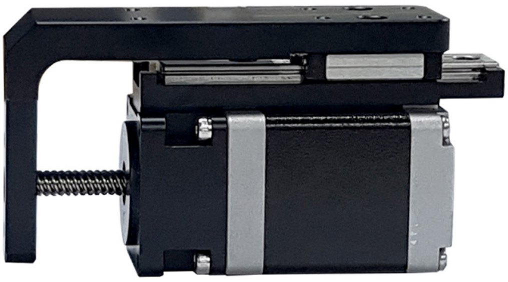
05

The best application as vertical and horizontal



## 1. Small Size Linear Actuator

ELA series is the component product for linear motion. With ELA, user does not have to use separate linear actuator.



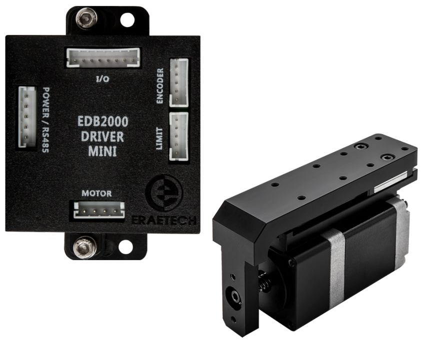
| Product | stroke (mm) |
|---|---|
| ELA 20 | 25 |
| ELA 28 | 30 |
| ELA 42 | 50 |
| ELA 56 | 60 |

* Please contact us for another stroke.

## 2. With many types of drives

ELA can be used with many types of drive.

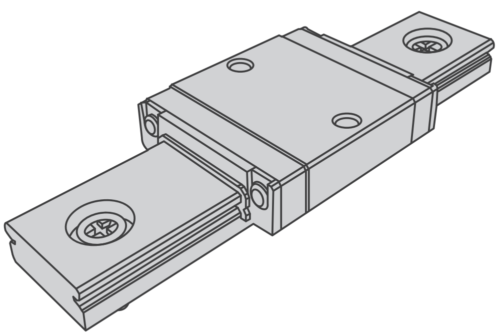
ELA and Ether CAT




ELA and EDB-MINI

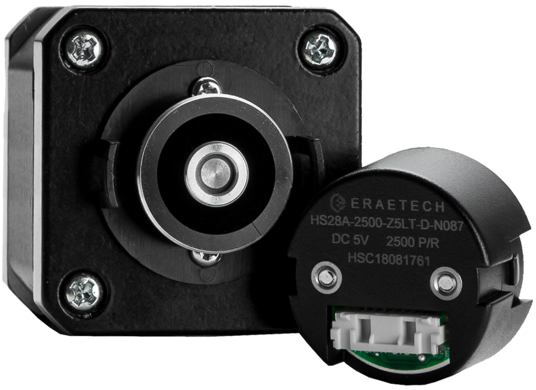
## 3. High rigidity LM guide

ELA series has high rigid LM guide. The LM guide has large block so that it has more allowable moment load.



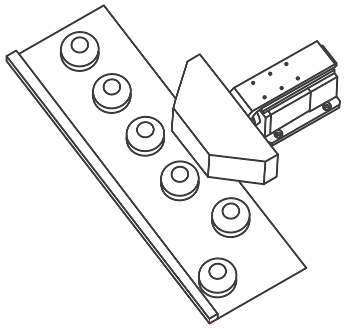
## 4. Open Loop / Closed Loop optional

Encoder resolution is optional (standard 10,000ppr, max. 40,000ppr)

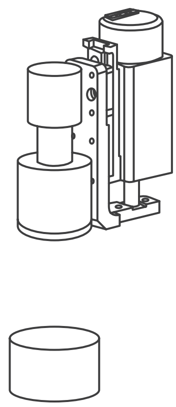



## 5. A lot of application

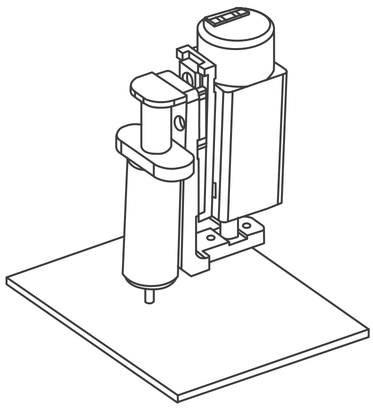
ELA is very usable in variable industries. And user does not have to design for linear motion, so it can reduces the cost and time.



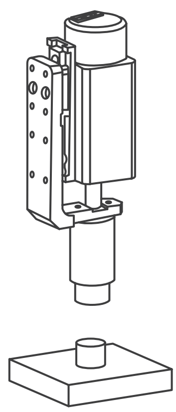
Centering



Camera Focusing



Dispenser



Press

# ELA28E - MNC - A - 30ST

1 2 3 4 5 6 7

## 1 ELA
ERAE-TECH LINEAR ACTUATOR

## 2 Motor size
20 - 20mm
28 - 28mm
42 - 42mm
56 - 56mm

## 3 Encoder
E : Encoder
- : None

## 4 Drive types
EX : EXCEL
CP : COMPACT
MN : MINI
ET3 : Ether CAT

## 5 Communication
P : Step/ Direction
C : RS 485
ET3 : Ether CAT

## 6 Encoder resolution
A - 10,000 ppr
B - 16,000 ppr
C - 20,000 ppr
D - 40,000 ppr
E - 8,192 ppr

## 7 Stroke

| | |
|---|---|
| ELA20 | 25 |
| ELA28 | 30 |
| ELA42 | 50 |
| ELA56 | 60 |

* Please contact ERAE-TECH for other lead pitches or strokes.

## ELA20

| Unit model code | Drive Type | Encoder | Encoder resolution |
|---|---|---|---|
| ELA20-EXC-A-25ST | EDB-EXCEL-C | | |
| ELA20-EXP-A-25ST | EDB-EXCEL-P | | |
| ELA20-CPC-A-25ST | EDB-COMPACT-C | | |
| ELA20-CPP-A-25ST | EDB-COMPACT-P | | |
| ELA20-MNC-A-25ST | EDB-MINI-C | | |
| ELA20-MNP-A-25ST | EDB-MINI-P | | |
| ELA20-ET3-A-25ST | EDB3-EtherCAT | | |
| ELA20E-EXC-A-25ST | EDB-EXCEL-C | O | A : 10000<br>B : 16000<br>C : 20000<br>D : 40000<br>E : 8192 |
| ELA20E-EXP-A-25ST | EDB-EXCEL-P | O | |
| ELA20E-CPC-A-25ST | EDB-COMPACT-C | O | |
| ELA20E-CPP-A-25ST | EDB-COMPACT-P | O | |
| ELA20E-MNC-A-25ST | EDB-MINI-C | O | |
| ELA20E-MNP-A-25ST | EDB-MINI-P | O | |
| ELA20E-ET3-A-25ST | EDB3-EtherCAT | O | |

## ELA28

| Unit model code | Drive Type | Encoder | Encoder resolution |
|---|---|---|---|
| ELA28-EXC-A-25ST | EDB-EXCEL-C | | |
| ELA28-EXP-A-25ST | EDB-EXCEL-P | | |
| ELA28-CPC-A-25ST | EDB-COMPACT-C | | |
| ELA28-CPP-A-25ST | EDB-COMPACT-P | | |
| ELA28-MNC-A-25ST | EDB-MINI-C | | |
| ELA28-MNP-A-25ST | EDB-MINI-P | | |
| ELA28-ET3-A-25ST | EDB3-EtherCAT | | |
| ELA28E-EXC-A-25ST | EDB-EXCEL-C | O | A : 10000<br>B : 16000<br>C : 20000<br>D : 40000<br>E : 8192 |
| ELA28E-EXP-A-25ST | EDB-EXCEL-P | O | |
| ELA28E-CPC-A-25ST | EDB-COMPACT-C | O | |
| ELA28E-CPP-A-25ST | EDB-COMPACT-P | O | |
| ELA28E-MNC-A-25ST | EDB-MINI-C | O | |
| ELA28E-MNP-A-25ST | EDB-MINI-P | O | |
| ELA28E-ET3-A-25ST | EDB3-EtherCAT | O | |

## ELA42

| Unit model code | Drive Type | Encoder | Encoder resolution |
|---|---|---|---|
| ELA42-EXC-A-25ST | EDB-EXCEL-C | | |
| ELA42-EXP-A-25ST | EDB-EXCEL-P | | |
| ELA42-CPC-A-25ST | EDB-COMPACT-C | | |
| ELA42-CPP-A-25ST | EDB-COMPACT-P | | |
| ELA42-MNC-A-25ST | EDB-MINI-C | | |
| ELA42-MNP-A-25ST | EDB-MINI-P | | |
| ELA42-ET3-A-25ST | EDB3-EtherCAT | | |
| ELA42E-EXC-A-25ST | EDB-EXCEL-C | O | A：10000<br>B：16000<br>C：20000<br>D：40000<br>E：8192 |
| ELA42E-EXP-A-25ST | EDB-EXCEL-P | O | |
| ELA42E-CPC-A-25ST | EDB-COMPACT-C | O | |
| ELA42E-CPP-A-25ST | EDB-COMPACT-P | O | |
| ELA42E-MNC-A-25ST | EDB-MINI-C | O | |
| ELA42E-MNP-A-25ST | EDB-MINI-P | O | |
| ELA42E-ET3-A-25ST | EDB3-EtherCAT | O | |

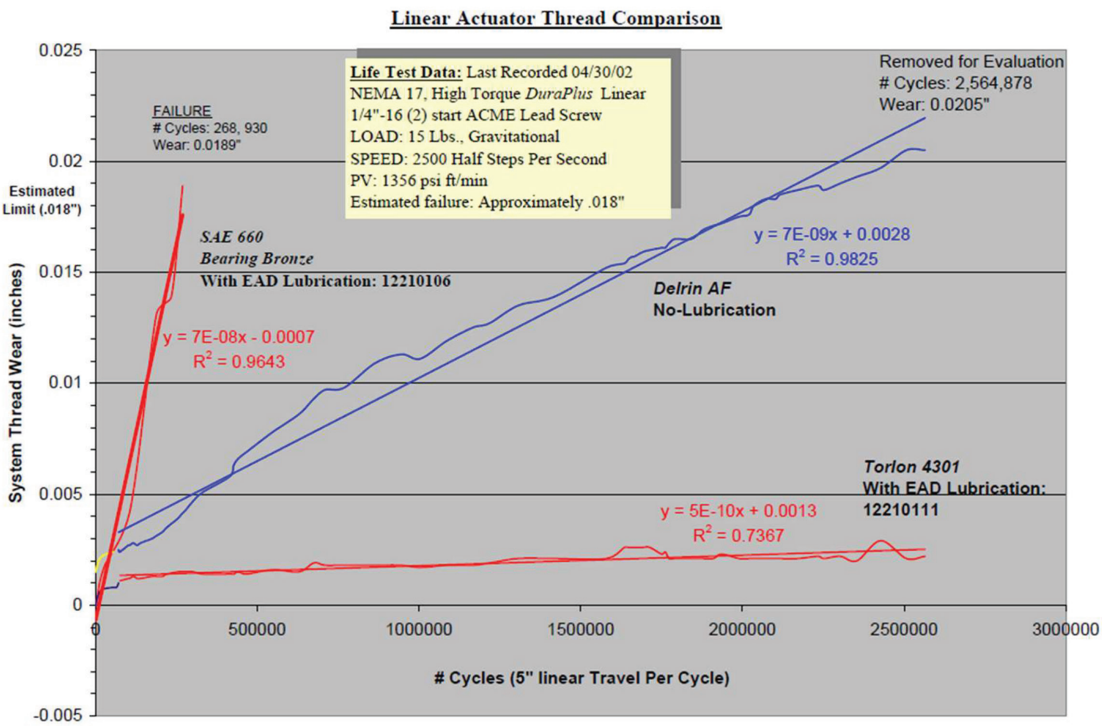
## ELA56

| Unit model code | Drive Type | Encoder | Encoder resolution |
|---|---|---|---|
| ELA56-EXC-A-25ST | EDB-EXCEL-C | | A：10000<br>B：16000<br>C：20000<br>D：40000<br>E：8192 |
| ELA56-EXP-A-25ST | EDB-EXCEL-P | | |
| ELA56-ET3-A-25ST | EDB3-EtherCAT | | |
| ELA56E-EXC-A-25ST | EDB-EXCEL-C | O | |
| ELA56E-EXP-A-25ST | EDB-EXCEL-P | O | |
| ELA56E-ET3-A-25ST | EDB3-EtherCAT | O | |

## ELA motor specification

| Specification | Unit | ELA 20 | ELA 28 | ELA 42 | ELA 56 |
|---|---|---|---|---|---|
| Motor Phase | | 2-Phases Bipolar | | | |
| Rated Voltage | V | 2.55 | 2.01 | 3.7 | 2.4 |
| Rated Current | A | 0.5 | 1.5 | 1.5 | 3 |
| Resistance | Ohm | 5.1 | 1.34 | 2.5 | 0.85 |
| Inductance | mH | 1.5 | 0.85 | 4.3 | 4 |
| Linear travel per step | mm | 0.02 | 0.0254 | 0.03175 | 0.0254 |
| Lead screw lead | mm | 4 | 5.08 | 6.35 | 4 |
| Insulation Resistance | Mohm | 100 | | | |
| Insulation Class | °c | B | | | |

## Motor Life Cycle




* Insert material is either Delrin or Peek. For material of Peek insert, you can refer to Torlon graph. For other materials, please contact ERAE-TECH.

| | EXCEL | COMPACT | Ether CAT | MINI |
|---|---|---|---|---|
| ELA 20 | O | O | O | O |
| ELA 28 | O | O | O | O |
| ELA 42 | O | O | O | X |
| ELA 56 | O | X | O | X |

* C : RS 485 / P : Step/Direction

## EDB-EXC/P

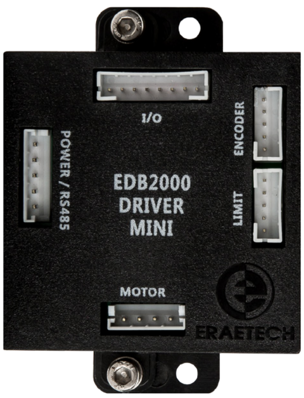
EDB-EXCEL

## EDB-CPC/P

EDB-COMPACT

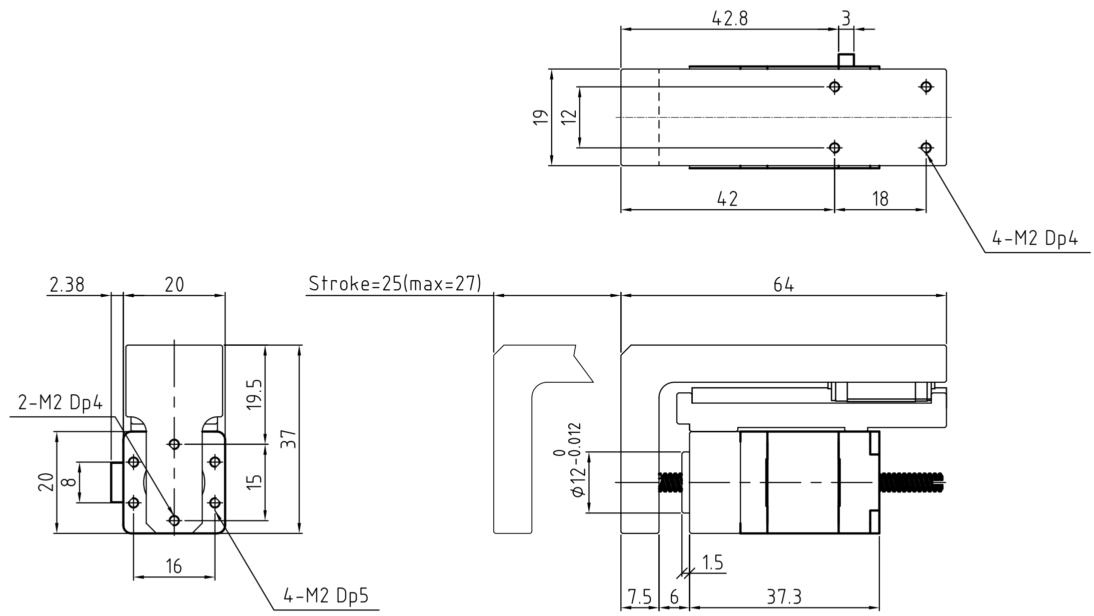
## EDB-MNC/P

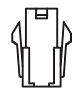
EDB-MINI




## EDB-Ether CAT

## ELA20

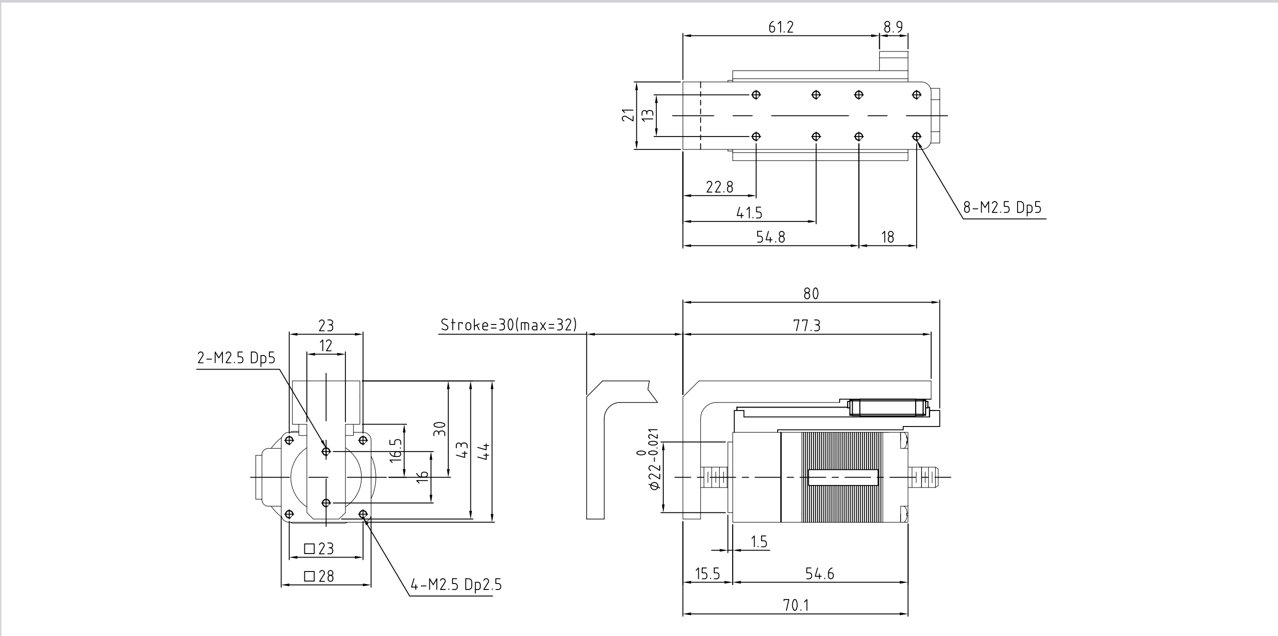


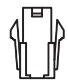



5559-04
MOTOR

* ELA20 has no encoder type.
* Please see the 2D and 3D drawings at official web-site.

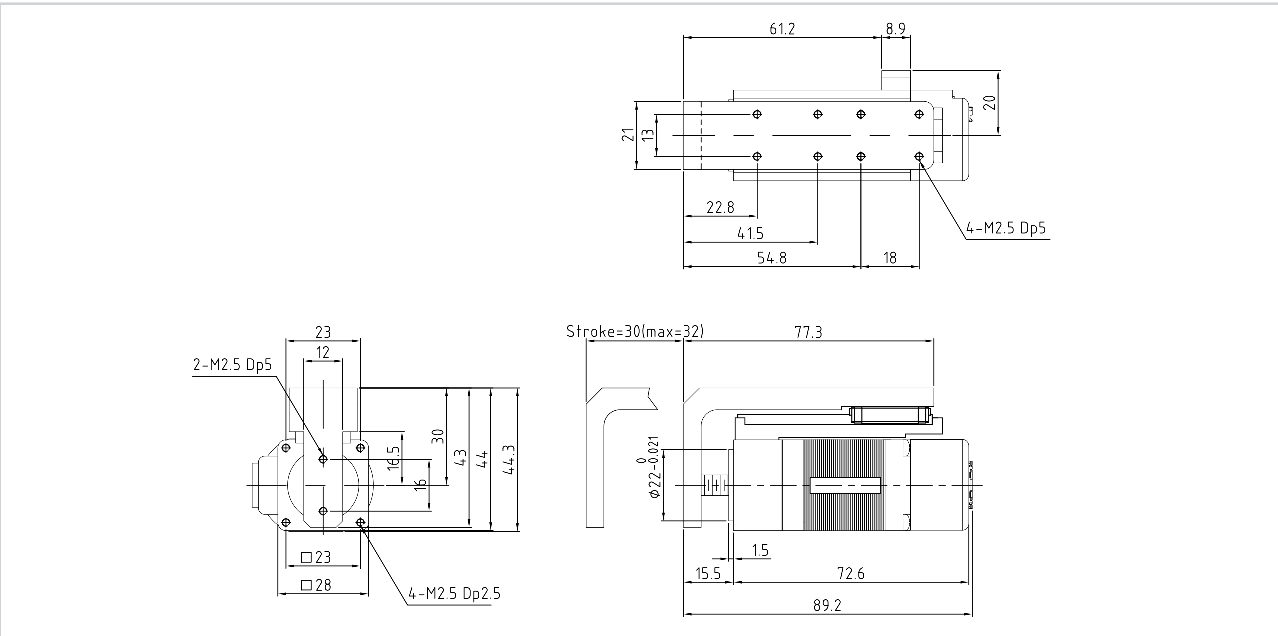
## ELA28

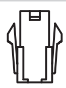


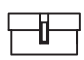
5559-04
MOTOR

## ELA28E



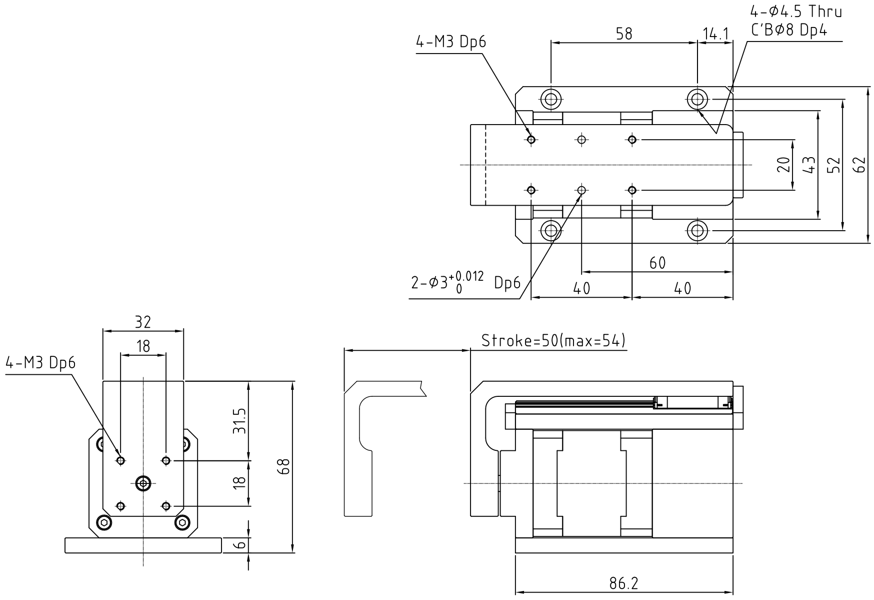
5559-04
MOTOR

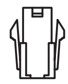


SMR-09
ENCODER

* ELA28 series provide not flying wire but connector type.

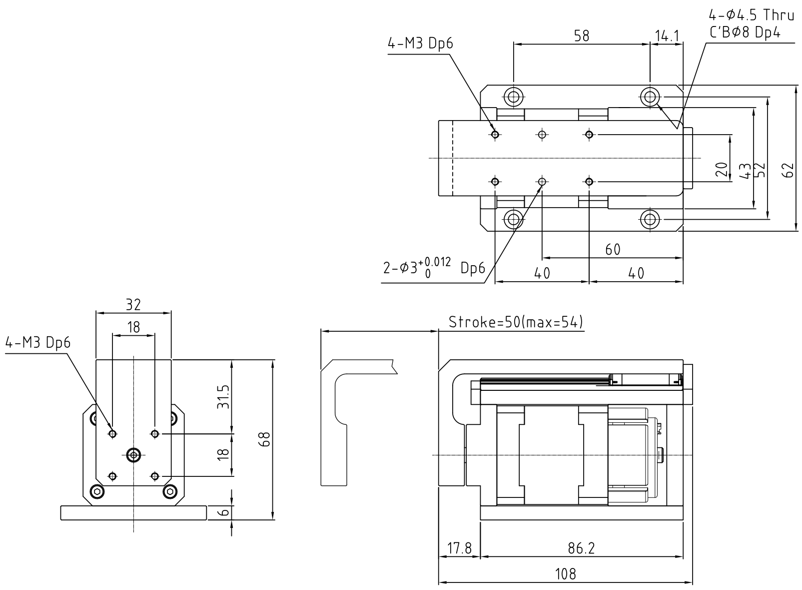
## ELA42

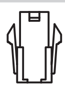


5559-04
MOTOR

## ELA42E



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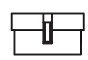
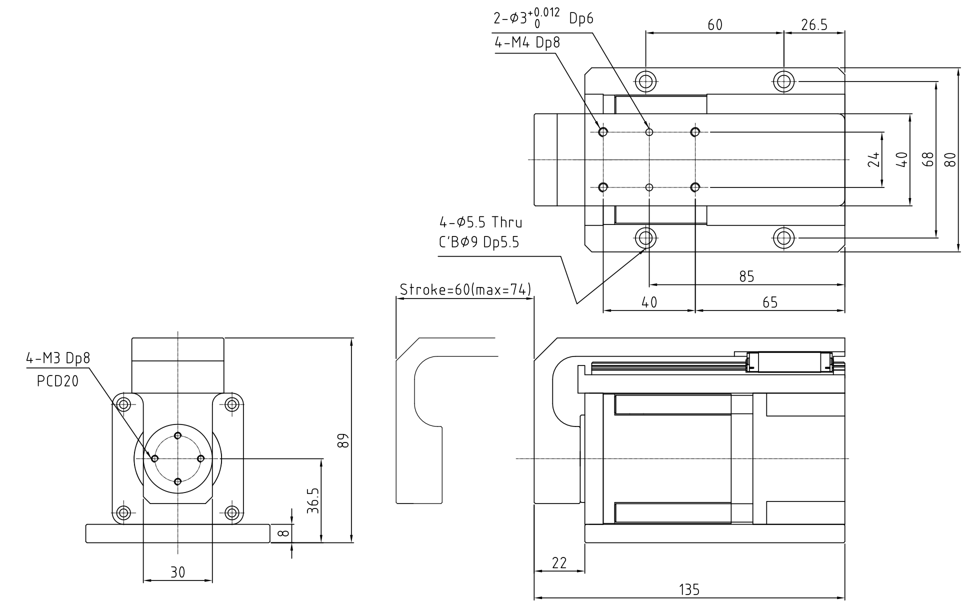
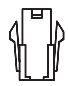
MOTOR



SMR-09
ENCODER

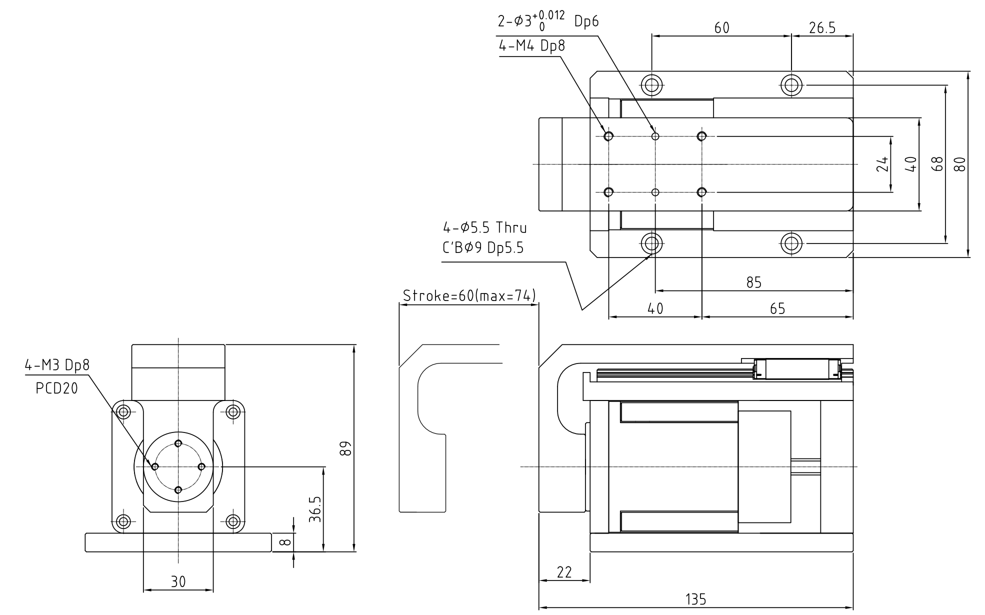
## ELA56

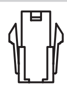


5559-04
MOTOR

## ELA56E



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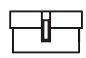
MOTOR



SMR-09
ENCODER

## ELA20

| Specification | | Unit | ELA20 |
|---|---|---|---|
| 1 | Stroke | mm | 25 |
| 2 | Lead | mm | 4 |
| 3 | Max. Allowable load | kg | 0.5 |
| 4 | Max. Thrust Force | N | 10 |
| 5 | Max. Holding force | N | 5 |
| 6 | Max. Velocity | mm/s | 25 |
| 7 | Max. Acc/Dec | sec | 0.1 |
| 8 | Repeatability | mm | ±0.015 |
| 9 | Lost Motion | mm | ±0.02 |
| 10 | Type of Screw | | Lead screw |
| 11 | Type of Guide | | LM Guide |
| 12 | Working Temperature | °c | 5-50 |
| 13 | Motor Size | mm | 20 |
| 14 | Encoder standard resolution | ppr | Non-Encoder |
| 15 | Weight | g | 150 |

* Please contact us for another stroke.

## Usable Drives

EXCEL

COMPACT

Ether CAT


MINI

## ELA28

| | Specification | Unit | ELA20 |
|---|---|---|---|
| 1 | Stroke | mm | 30 |
| 2 | Lead | mm | 5.08 |
| 3 | Max. Allowable load | kg | 1.25 |
| 4 | Max. Thrust Force | N | 30 |
| 5 | Max. Holding force | N | 12 |
| 6 | Max. Velocity | mm/s | 30 |
| 7 | Max. Acc/Dec | sec | 0.1 |
| 8 | Repeatability | mm | ±0.015 |
| 9 | Lost Motion | mm | ±0.02 |
| 10 | Type of Screw | | Lead screw |
| 11 | Type of Guide | | LM Guide |
| 12 | Working Temperature | °c | 5-50 |
| 13 | Motor Size | mm | 28 |
| 14 | Encoder standard resolution | ppr | 10,000 |
| 15 | Weight | g | 300 |

* Please contact us for another stroke.

## Usable Drives

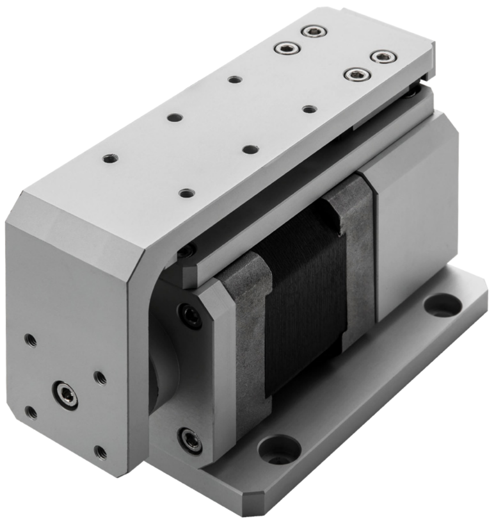
EXCEL

COMPACT

Ether CAT


MINI

## ELA42



| Specification | | Unit | ELA20 |
|---|---|---|---|
| 1 | Stroke | mm | 50 |
| 2 | Lead | mm | 6.35 |
| 3 | Max. Allowable load | kg | 5 |
| 4 | Max. Thrust Force | N | 120 |
| 5 | Max. Holding force | N | 50 |
| 6 | Max. Velocity | mm/s | 50 |
| 7 | Max. Acc/Dec | sec | 0.1 |
| 8 | Repeatability | mm | ±0.015 |
| 9 | Lost Motion | mm | ±0.02 |
| 10 | Type of Screw | | Lead screw |
| 11 | Type of Guide | | LM Guide |
| 12 | Working Temperature | °c | 5-50 |
| 13 | Motor Size | mm | 42 |
| 14 | Encoder standard resolution | ppr | 16,000 |
| 15 | Weight | g | 820 |

* Please contact us for another stroke.

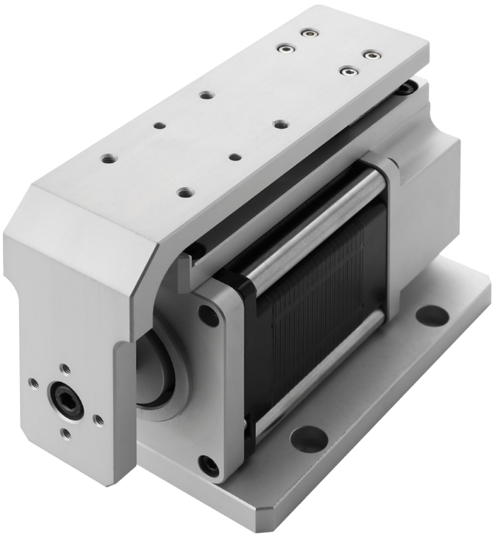
## Usable Drives

EXCEL

COMPACT

Ether CAT

## ELA56



| | Specification | Unit | ELA20 |
|---|---|---|---|
| 1 | Stroke | mm | 60 |
| 2 | Lead | mm | 4 |
| 3 | Max. Allowable load | kg | 15 |
| 4 | Max. Thrust Force | N | 300 |
| 5 | Max. Holding force | N | 150 |
| 6 | Max. Velocity | mm/s | 60 |
| 7 | Max. Acc/Dec | sec | 0.1 |
| 8 | Repeatability | mm | ±0.015 |
| 9 | Lost Motion | mm | ±0.02 |
| 10 | Type of Screw | | Lead screw |
| 11 | Type of Guide | | LM Guide |
| 12 | Working Temperature | °c | 5-50 |
| 13 | Motor Size | mm | 56 |
| 14 | Encoder standard resolution | ppr | 16,000 |
| 15 | Weight | g | 1750 |

* Please contact us for another stroke.

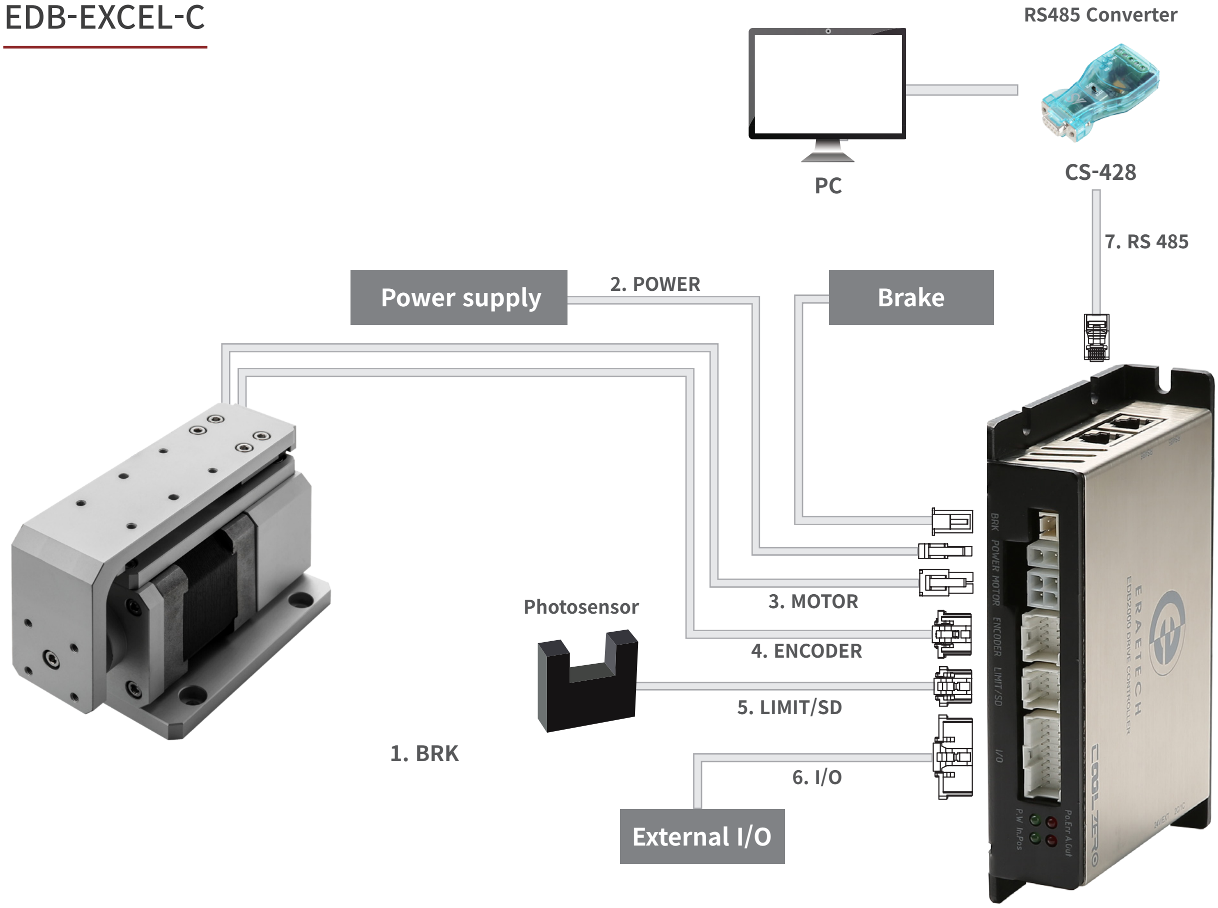
## Usable Drives

EXCEL

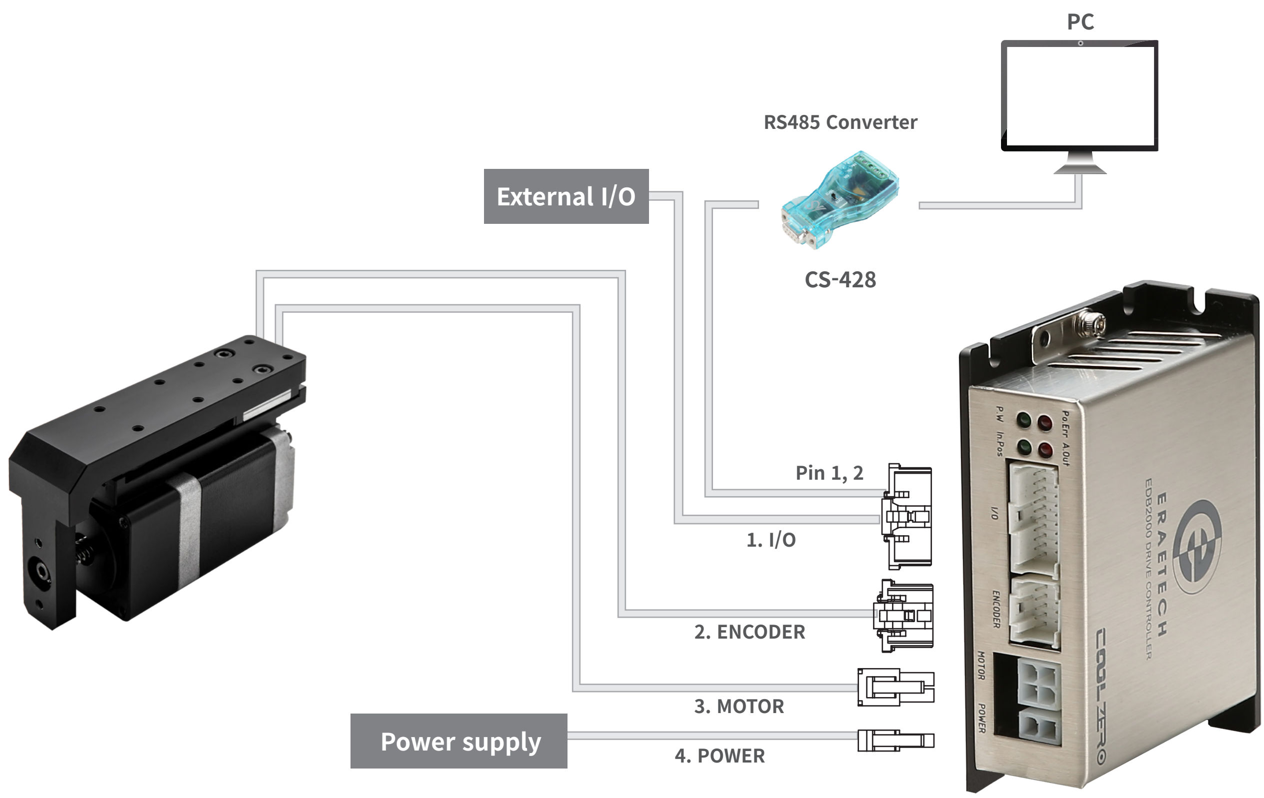
Ether CAT

# System structure

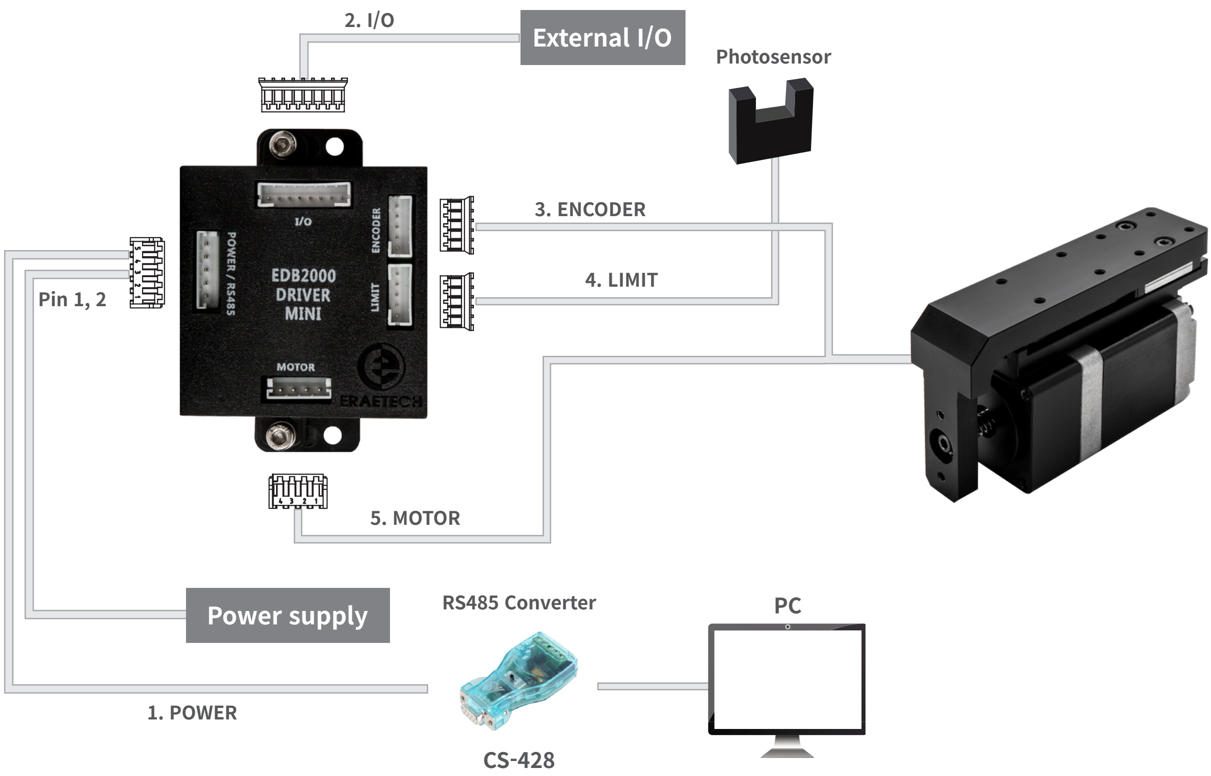
## EDB-EXCEL-C




## EDB-COMPACT-C

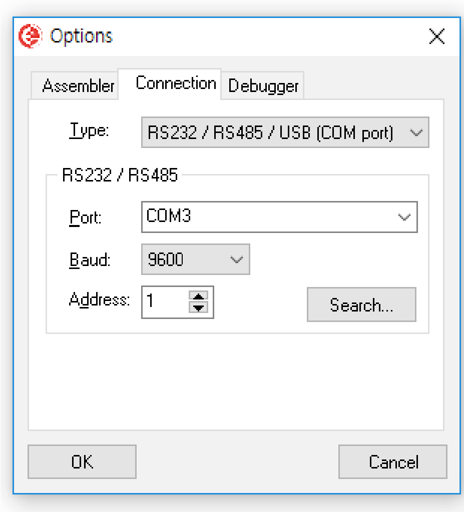


## EDB-MINI-C

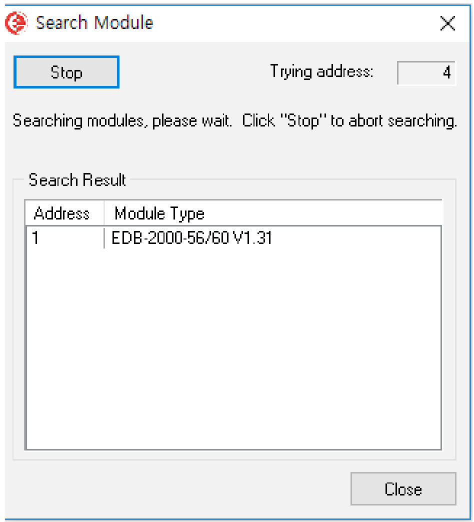

2. I/O
External I/O
Photosensor
I/O
ENCODER
POWER / RS485
EDB2000
DRIVER
MINI
LIMIT
MOTOR
ERAETECH
3. ENCODER
4. LIMIT
Pin 1, 2
5. MOTOR
Power supply
RS485 Converter
PC
1. POWER
CS-428

1. Execute EMCL-IDE. It can be downloaded from Erae-Tech official web-stie.

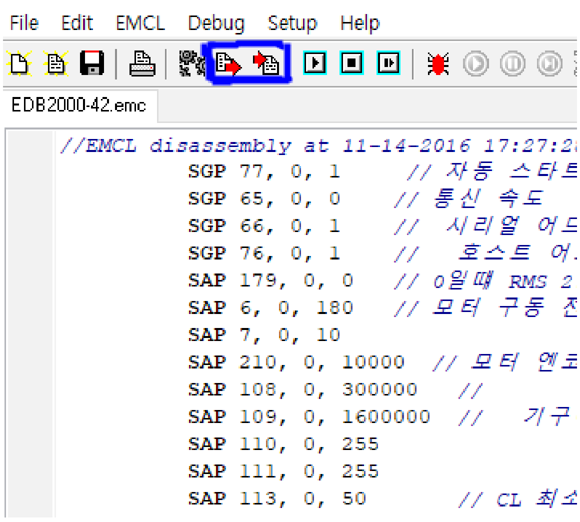
2. Click ‘Setup’ – ‘Options’ on tab, then clicks the ‘Connection’.




3. You can find the window like left picture.
It automatically finds empty port. Default Baud rate is 9600. If you programmed other baud rate, then please set the baud rate you set, then click ‘OK’

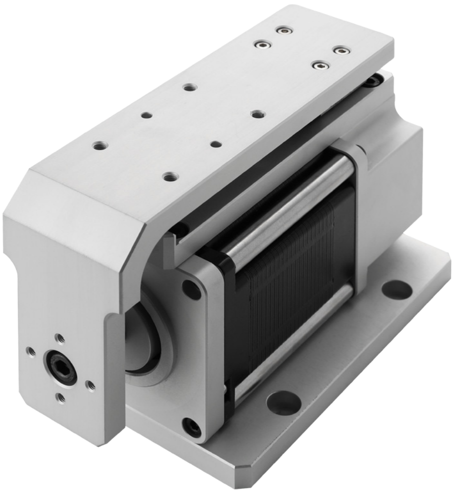



4. You can see the product information after click the ‘Start’ button like a picture on right side. Double-click the product information and click ‘OK’. Then it connects to motor successfully.




5. In the blue box on left picture, it has ‘DOWNLOAD’ and ‘DISASSEMBLE’. ‘DOWNLOAD’ is a function to write new setting value or command to EEPROM, and ‘DISASSEMBLE’ is a function to load program from EEPROM to EMCL window.

**Please refer ‘ELA-Series Firmware Manual’ on web-site for all the parameters and functions.**
**EMCL-IDE and other softwares can be downloaded at www.erae-tech.com.**



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