

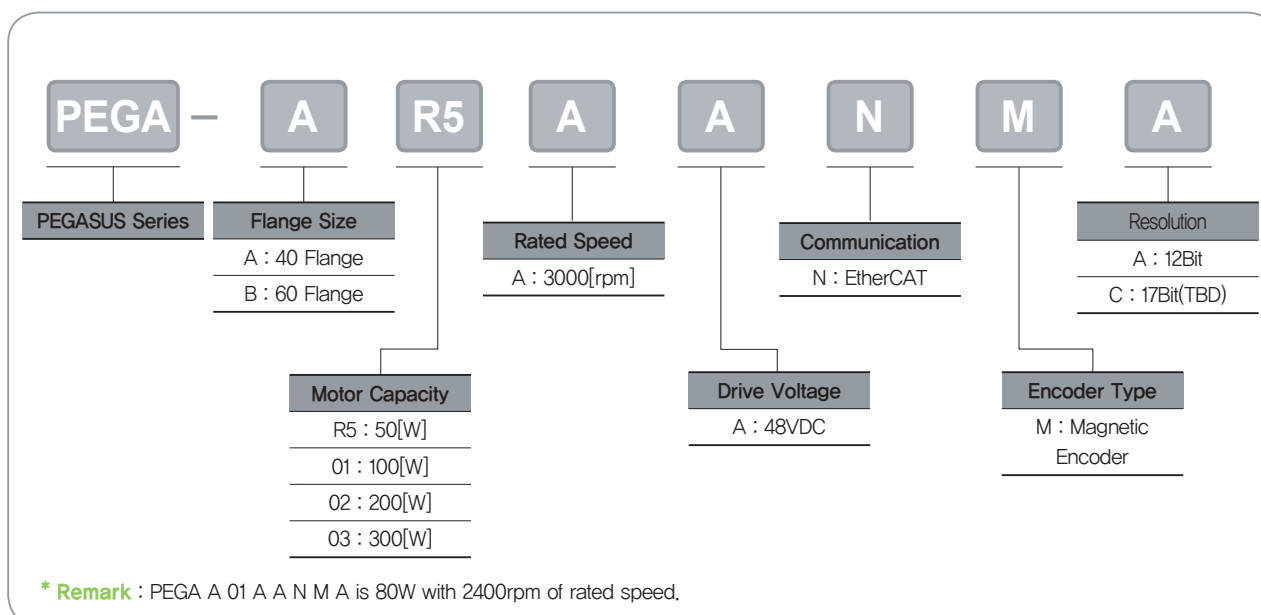
# L7 SERIES SYSTEM

Integrated Servo System (EtherCAT)

## PEGASUS Series



### Servo Drive Designation



## PEGASUS Series

### Characteristic

#### ● Enhanced efficiency integrated servo system

- Cost effective from installation by integrated system of motor, encoder cable and drive
- Maximization for useful space when installed at limited and small space
- High effectiveness for application of multi axis because there is no limitation for space of installation

#### ● Real-time control through EtherCAT

- High speed, Real-time capability and Synchronization mechanism
- Improved EtherCAT communication speed
- Supporting CoE, EoE and FoE

### Identifying the Part of PEGASUS Series



#### 1 Input / Output Signal Connector (CN1)

- This Connector is for Sequence Input / Output Signals

#### 2 EtherCAT Communication Output Port (OUT)

#### 3 Status LED

- It Indicates the current state of Ether CAT Communication

#### 4 Power Connector (CN3)

#### 5 USB Connector (CN5, Mini B type)

- This Connector is to Communicate With a PC

#### 6 Node Address Setting Switch

- This Switch is to set the node address of the drive  
You can set the node addresses from 0 to 15

#### 7 EtherCAT Communication Input Port (IN)

#### 8 Safety Connector (CN2)

- This Connector connects Safety Devices

# L7 SERIES SYSTEM

## Specifications of PEGASUS Series

### Rated Values of Servo Drive

| Rated values for servo drive     | □40 50W         | □40 100W | □60 100W | □60 200W | □60 300W |
|----------------------------------|-----------------|----------|----------|----------|----------|
| Continuous output current [Arms] | 1.77            | 2.38     | 3.62     | 5        | 6.8      |
| Maximum output current [Arms]    | 3.54            | 3.57     | 7.24     | 10       | 13.6     |
| Input voltage                    | DC 48V ~ DC 60V |          |          |          |          |

### Basic Specifications

| Category                                  |                                             | Details                                                                                                                                                                                              |
|-------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use conditions                            | Control method                              | PWM controlled sine wave current driving method                                                                                                                                                      |
|                                           | Operating temperature / storage temperature | 0~+40[°C] / -20~ +60[°C]                                                                                                                                                                             |
|                                           | Operating humidity / storage humidity       | Below 80% RH / Below 90% RH (no freeze or condensation)                                                                                                                                              |
|                                           | Vibration-/impact-resistance                | TBD                                                                                                                                                                                                  |
|                                           | Degree of protection / degree of pollution  | TBD                                                                                                                                                                                                  |
|                                           | Altitude                                    | 1000 m or lower                                                                                                                                                                                      |
|                                           | Other                                       | To be free from electrostatic noise, strong electrolysis, or radiation.                                                                                                                              |
| Performance                               | Speed variation                             | Load variation<br>At 0 to 100% load: $\pm 3\%$ (at rated speed)                                                                                                                                      |
|                                           |                                             | Voltage variation<br>Rated voltage $\pm 10\%$ : 0% (at rated speed)                                                                                                                                  |
|                                           |                                             | Temperature variation<br>25°C: $\pm 0.1\%$ or less (at rated speed)                                                                                                                                  |
| Input/output signal                       | Input signal                                | Input voltage range: DC 12 V – DC 30 V<br>The 4-channel input signal can be assigned to 12 functions:<br>POT, NOT, HOME, STOP, PCON, GAIN2, PCL, NCL, PROBE1, PROB2, EMG, and ARST.                  |
|                                           | Output signal                               | Rated voltage and current: DC 24 V $\pm 10\%$ , 120 [mA]<br>The 2-channel output signal can be assigned to 11 functions: BRAKE, ALARM, RDY, ZSPD, INPOS1, TLMT, VLMT, INSPD, WARN, TGON, and INPOS2. |
| Analog Monitor                            |                                             | Number of channels: 1<br>Output voltage range: $\pm 4V$<br>Angular resolution: 12 bits<br>Stabilization time: 15 $\mu s$                                                                             |
| USB communication                         | Connecting device                           | PC or USB storage medium                                                                                                                                                                             |
|                                           | Communication standard                      | Conform to the USB 2.0 Full Speed Standard.                                                                                                                                                          |
|                                           | Function                                    | Firmware download, parameter setting, adjustment, auxiliary functions, and parameter copy function.                                                                                                  |
| Dynamic brake (three-phase short-circuit) |                                             | Activates when servo alarm, servo OFF, or Emergency stop (POT, NOT and EMG) is input.                                                                                                                |
| Protection functions                      |                                             | Overcurrent, overload, current limit, overheat, overvoltage, undervoltage, overspeed, encoder error, position follow error, etc.                                                                     |
| Auxiliary functions                       |                                             | Gain adjustment, alarm history, JOG drive, programmed JOG drive, etc.                                                                                                                                |
| Safety functions                          | Input                                       | STO1 and STO2                                                                                                                                                                                        |
|                                           | Compatible standard                         | TBD                                                                                                                                                                                                  |

## Specifications of PEGASUS Series

## EtherCAT Communication Specification

| Category               |     | Details                                                                             |
|------------------------|-----|-------------------------------------------------------------------------------------|
| Communication standard | FoE | Firmware download                                                                   |
|                        | EoE | Parameter setting, adjustment, auxiliary functions, and parameter copy through UDP. |
|                        | CoE | IEC 61158 Type12, IEC 61800-7 C/A 402 drive profile                                 |
| Physical layer         |     | 100BASE-TX (IEEE802.3)                                                              |
| Connector              |     | RJ45 x 2                                                                            |
| Distance               |     | Within 100 m between nodes                                                          |
| DC (Distributed Clock) |     | Sync by DC mode                                                                     |
| LED Display            |     | L/A0(Link/Act IN)<br>L/A1(Link/Act OUT)<br>RUN<br>ERR                               |
| Cia402 drive Profile   |     | Supports CSP, CSV, CST, PP, PV, PT, and HM Modes.                                   |

## Motor Specification

| Model         | Unit                                    | SAR5A-8                  | SA01A-8 | SB01A-6 | SB02A-9 | SB03A-9 |
|---------------|-----------------------------------------|--------------------------|---------|---------|---------|---------|
| Frame Size    | [mm]                                    | 40                       | 40      | 60      | 60      | 60      |
| Rated Power   | [W]                                     | 50                       | 80      | 100     | 200     | 300     |
| Rated Torque  | [N m]                                   | 0.16                     | 0.32    | 0.32    | 0.64    | 0.95    |
|               | [Kgf cm]                                | 1.62                     | 3.25    | 3.25    | 6.5     | 9.74    |
| Rated Speed   | [rpm]                                   | 3,000                    | 2,400   | 3,000   | 3,000   | 3,000   |
| Inertia       | [gf cm s <sup>2</sup> ]                 | 0.02                     | 0.0435  | 0.114   | 0.186   | 0.328   |
|               | [Kg m <sup>2</sup> x 10 <sup>-4</sup> ] | 0.02                     | 0.0426  | 0.116   | 0.182   | 0.321   |
| Rated Voltage | [Vdc]                                   | Input Power : 48VDC      |         |         |         |         |
| Encoder Type  | —                                       | Magnetic Encoder (12bit) |         |         |         |         |

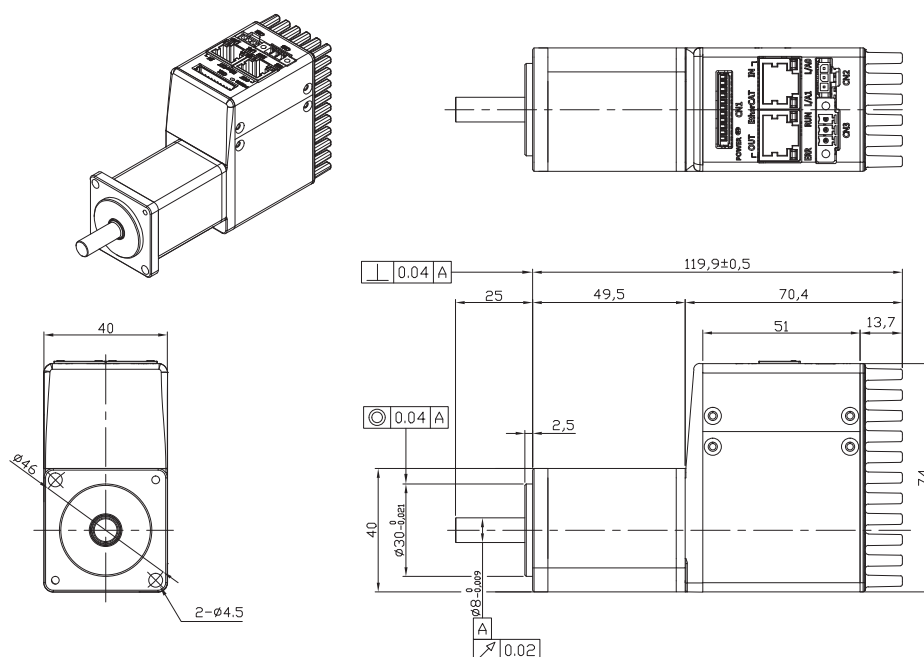
**Note1)** SA01A-8 can be operated at 3000rpm(100w) with 60Vdc of input power( instead of 48Vdc)

# L7 SERIES SYSTEM

## External Dimensions of PEGASUS Series

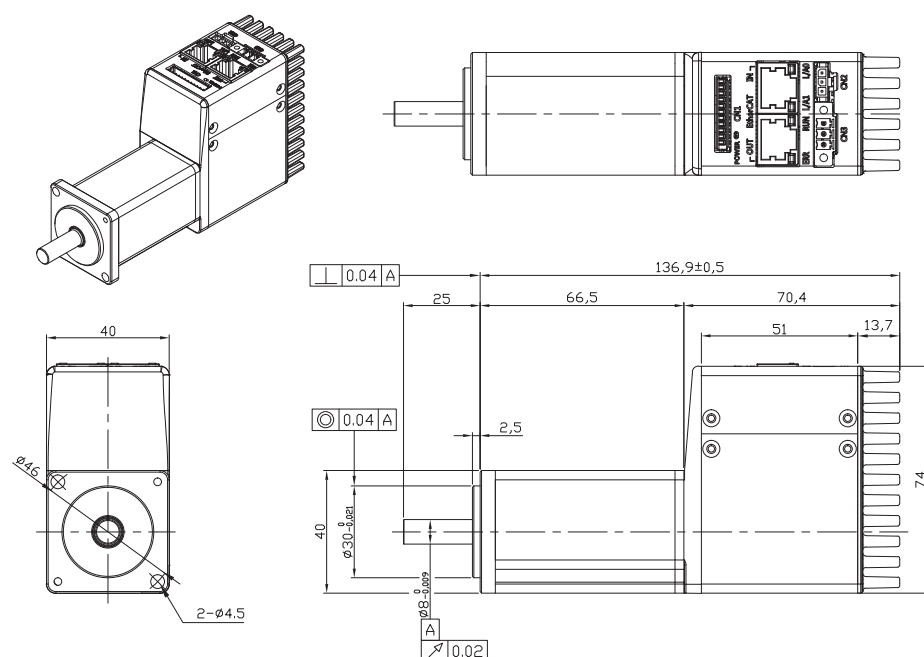
### PEGA-AR5A

\*Unit [mm]



### PEGA-A01A

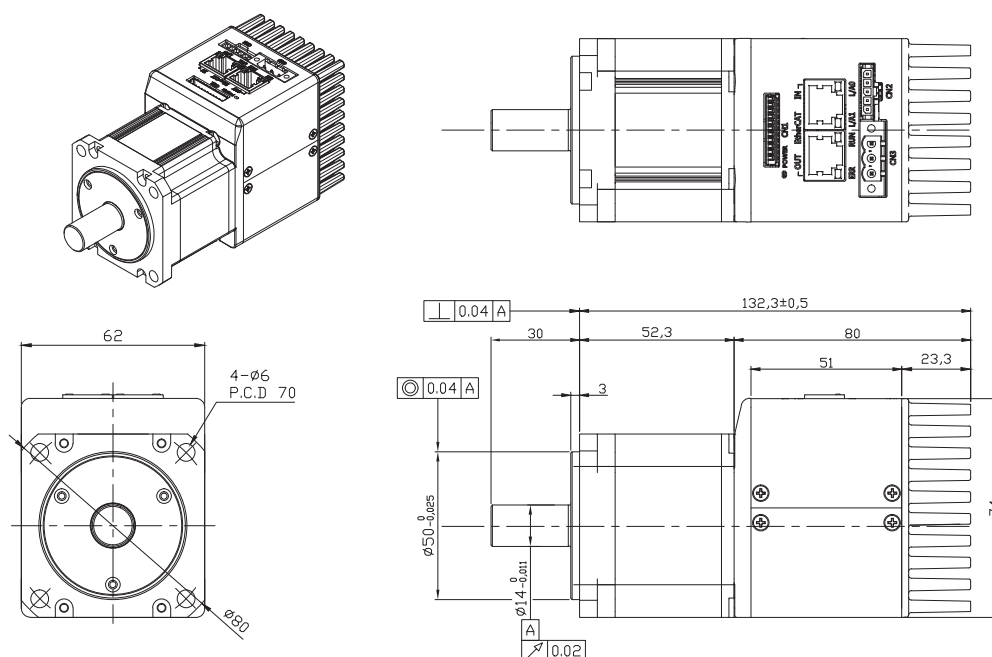
\*Unit [mm]



# External Dimensions of PEGASUS Series

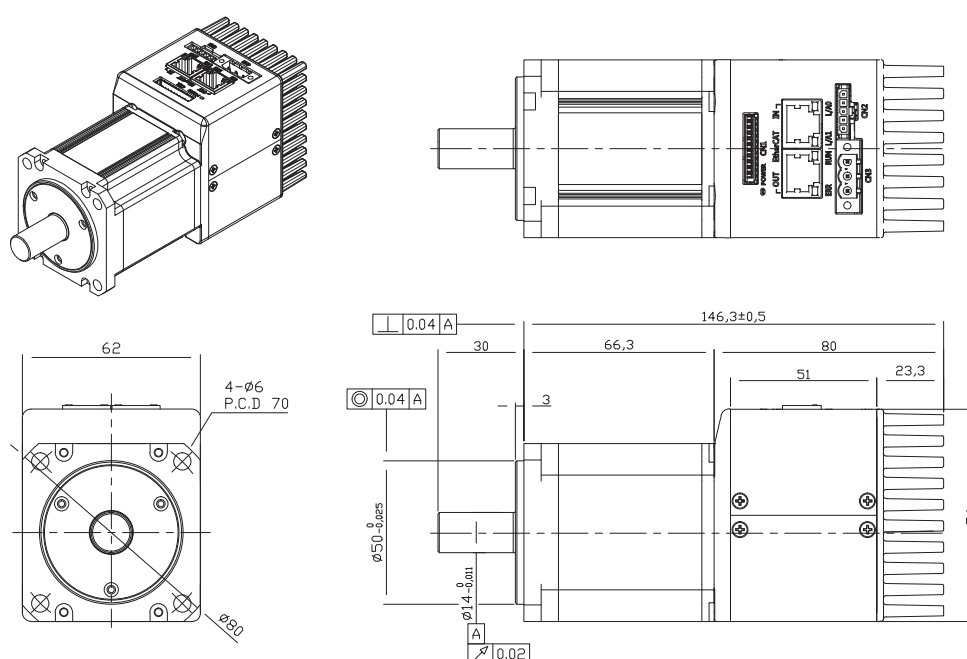
## PEGA-B01A

\*Unit [mm]



## PEGA-B02A

\*Unit [mm]

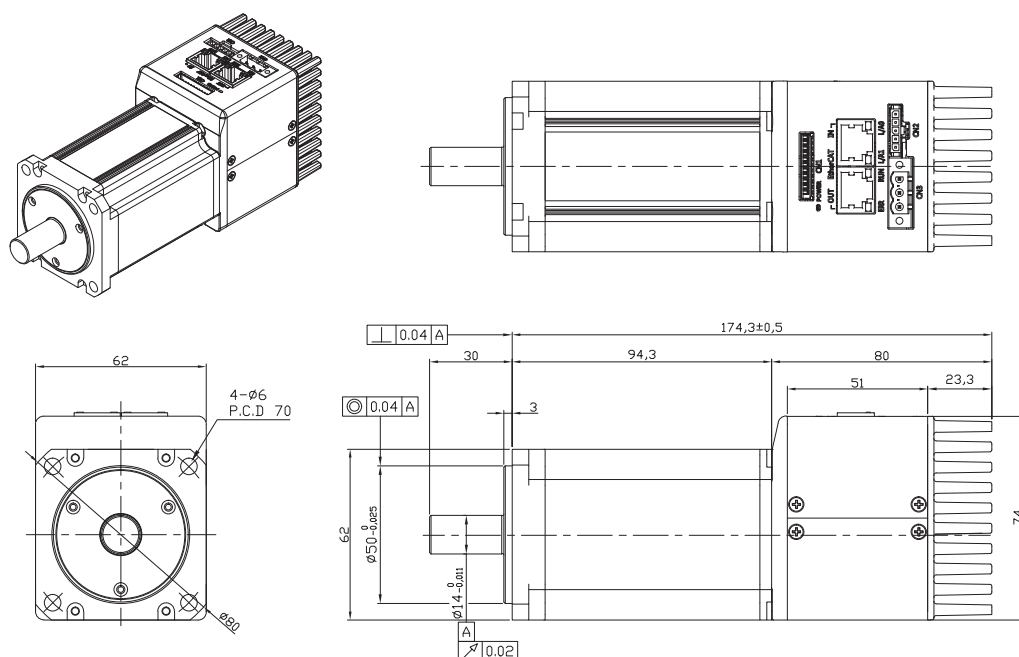


# L7 SERIES SYSTEM

## External Dimensions of PEGASUS Series

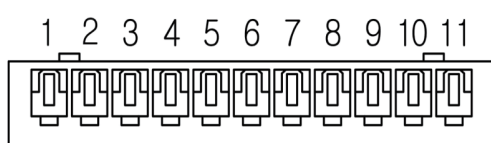
### PEGA-B03A

\*Unit [mm]



### Accessory Kit

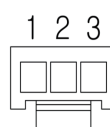
#### CN1 : I/O Connector



51004-1100 (MOLEX)

| Pin Number | Direction | Name     | Signals              | Descriptions                 |
|------------|-----------|----------|----------------------|------------------------------|
| 1          | VCC       | +24V     | +24V INPUT           | +24V Vcc Input               |
| 2          | Input     | POT      | Positive Over-Travel | Limit Sensor Input           |
| 3          | Input     | NOT      | Negative Over Travel |                              |
| 4          | Input     | HOME     | Home Sensor          | Home Sensor Input for Homing |
| 5          | Input     | STOP     | Stop Input           | Stop Command Input           |
| 6          | Output    | BRAKE+   | BRAKE                | Output Brake Control Signal  |
| 7          | Output    | BRAKE-   |                      |                              |
| 8          | Output    | ALARM+   | Alarm Output         | Servo Alarm Output           |
| 9          | Output    | ALARM-   |                      |                              |
| 10         | Output    | MONITOR1 | Analog Monitor       | Analog Monitor Output(0V~5V) |
| 11         | GND       | AGND     | AGND(0V)             | Analog Signal Graound        |

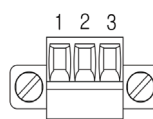
#### CN2 : Safe Torque Off Connector



43645-3 (MOLEX)

| Pin Number | Name   | Descriptions                       |
|------------|--------|------------------------------------|
| 1          | HWBB1  | Safe Torque Off(STO) input signals |
| 2          | HWBB2  |                                    |
| 3          | COMMON | DC 24V GND                         |

#### CN3 : Power Connector



MC\_1.5-3-STF-3.5  
(PHOENIX CONTACT)

| Pin Number | Name        | Descriptions |
|------------|-------------|--------------|
| 1          | FG          | Frame Ground |
| 2          | N(DC 0V)    | DC 0V GND    |
| 3          | VCC(DC 48V) | DC 48V input |