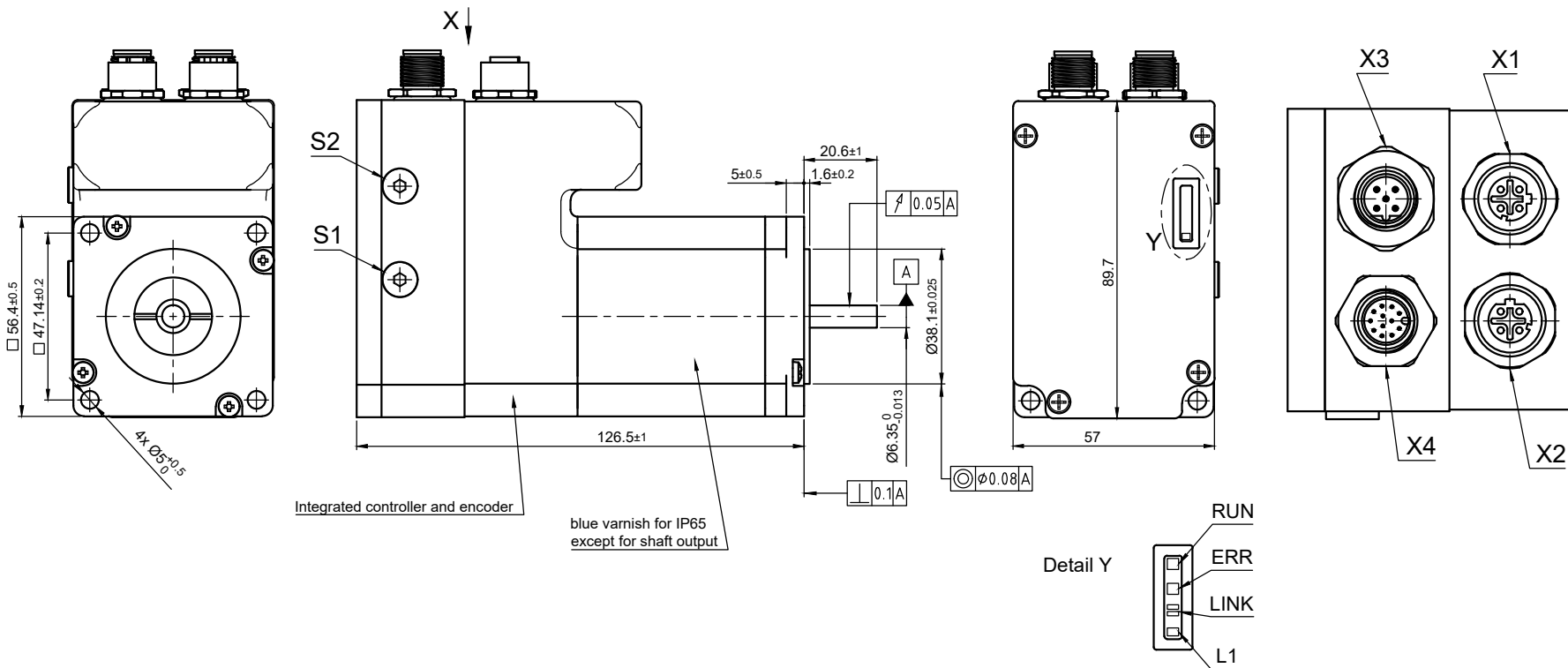




| X1 EtherCAT IN                  |  |
|---------------------------------|--|
| M12/ 4-Pole / D-Coding / female |  |

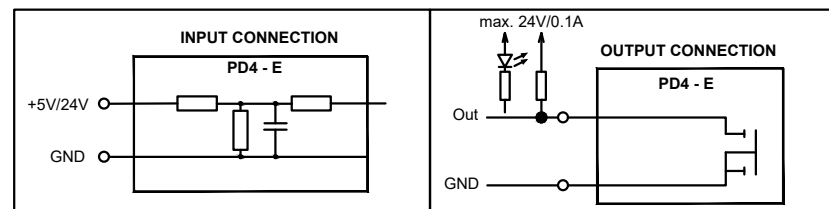
| X2 EtherCAT OUT                 |          |
|---------------------------------|----------|
| M12/ 4-Pole / D-Coding / female |          |
| Pin No.                         | Function |
| 1                               | TD+      |
| 2                               | RD+      |
| 3                               | TD-      |
| 4                               | RD-      |

| X3 POWER                      |              |
|-------------------------------|--------------|
| M12/ 5-Pole / B-Coding / male |              |
| Pin No.                       | Function     |
| 1                             | +UB (12-48V) |
| 2                             | +UB (12-48V) |
| 3                             | GND          |
| 4                             | GND          |
| 5                             | N.C.         |

| X4 IO                          |                                 |
|--------------------------------|---------------------------------|
| M12/ 12-Pole / A-Coding / male |                                 |
| Pin No.                        | Function                        |
| 1                              | GND                             |
| 2                              | Input 1 (+5V/+24V)              |
| 3                              | Input 2 (+5V/+24V)              |
| 4                              | Input 3 (+5V/+24V)              |
| 5                              | Input 4 (+5V/+24V)              |
| 6                              | Input 5 (+5V/+24V)              |
| 7                              | Input 6 (+5V/+24V)              |
| 8                              | Analog Input (0-10V/0-20mA)     |
| 9                              | Output 1 (open drain)           |
| 10                             | Output 2 (open drain)           |
| 11                             | +5V Voltage Supply (max. 100mA) |
| 12                             | +UB Logic (24V)                 |

| A-Shaft                           | Preload Spring | B-Shaft |
|-----------------------------------|----------------|---------|
|                                   |                |         |
| Max. Axial Force Fa               | N              | 15      |
| Max. Radial Force Fr (az = 20 mm) | N              | 52      |
| Axial Play Fa = 200N              | mm             | 0.2     |
| Radial Play Fr = 4.5 N            | mm             | 0.02    |

| MOTOR SPECIFICATION           |                   |                      |
|-------------------------------|-------------------|----------------------|
| Min. Operating Voltage        | V DC              | 12                   |
| Max. Operating Voltage        | V DC              | 48                   |
| Current per Winding           | A                 | 4.2                  |
| Holding Torque                | Nm                | 1.87                 |
| Step Angle                    | ±5°               | 1.8                  |
| Rotor Inertia                 | kg m <sup>2</sup> | 48 x10 <sup>-6</sup> |
| Singleturn Encoder Resolution | bit               | 17                   |
| Multiturn Encoder Resolution  | bit               | 16                   |



| GENERAL MOTOR SPECIFICATION                    |      |            |
|------------------------------------------------|------|------------|
| Interface                                      |      | ETHERCAT   |
| Ambient Temperature                            | °C   | -10 ... 40 |
| Switch-off Temperature                         | °C   | 75         |
| Max. Ambient Humidity (non condensing)         | %    | 85         |
| Insulation Class                               |      | B          |
| Insulation Resistance                          | MΩ   | 100        |
| Dielectric Strength (for 1 min - coil to case) | V AC | 500        |
| Protection Class (except shaft outlet)         |      | IP65       |

| ISO 8015 | ISO 1302  | ISO 2768 cK | ISO 13715 | Weight: ~1.4 kg         |           |
|----------|-----------|-------------|-----------|-------------------------|-----------|
|          |           |             | Date      | Name                    |           |
|          |           |             | Drawn     | 28.07.2022              | Schneid_A |
|          |           |             | Reviewed  | 04.08.2022              | Reith_S   |
|          |           |             | Released  | 04.08.2022              | Reith_S   |
| REV      | Rev. Text | Name        | Date      |                         |           |
|          |           |             |           | PD4-E591L42-M-65-1A-CYL |           |
|          |           |             |           | 20001585                | A4 Page 1 |
|          |           |             |           | State: Released         | Rev: 00   |
|          |           |             |           | CONFIDENTIAL            |           |