



PMC EZ – EnDat 2.2 digital

Pilz

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1 Safety notes

1.1 General safety notes



WARNING!

Injury due to moving or rotating parts!

Burns due to contact with hot surfaces!

- Only connect the motor while observing the following safety notes, the associated operating manual and any applicable national, local or system-specific regulations.

1.2 Safety with electrical connections



DANGER!

Electric shock!

Serious injuries due to contact with live parts!

- Carry out all work on a de-energized motor!
- Make sure that the motor shaft is stationary during all work. A rotating rotor can cause high voltages at the connections.
- Disconnect the supply voltage. Be aware that there may still be dangerously high voltages at the drive controller, even up to 15 minutes after switching off the supply voltage, due to the residual charge of the link capacitors. Observe the discharge time specification of the drive controller.
- Cover all open electrical connections, e.g. using protective caps.
- Secure the installation location as per regulations, e.g. using locks or warning signs.

1.3 Preventing connection errors



ATTENTION!

Damage to the motor or motor components due to electrical connection errors!

- Observe the motor nameplate and the connection plan. Contact Technical Support in case of questions.

1.4 Safe functions and EMC of the drive system



ATTENTION!

Damage to the motor or impairment of motor function!


Violation of EMC requirements mandated by law!

While commissioning the motor, the motor may be damaged or compliance with legal EMC requirements may no longer be possible if you use connection cables or drive controllers that are not suitable for the motor. Any warranty claims shall be void under these circumstances.

- Use connection cables or drive controllers from Pilz GmbH & Co. that are appropriate for the motor.

2 Connection of the motor housing to the grounding conductor system

Connect the motor housing to the grounding conductor system of the machine in order to prevent personal injury and faulty triggering of residual current protective devices.

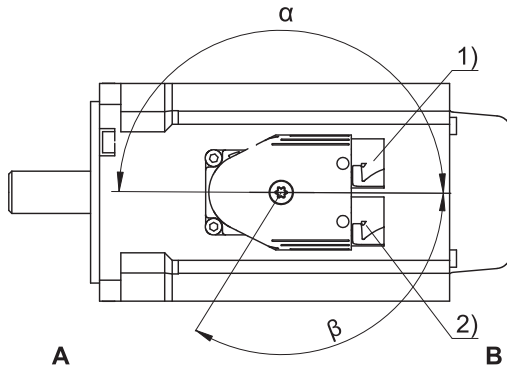
All attachment parts required for the connection of the grounding conductor to the motor housing are delivered with the motor. The grounding screw of the motor is identified with the symbol  in accordance with IEC 60417-DB. The cross-section of the grounding conductor has to be at least as large as the cross-section of the lines in the power connection.

3 Plug connectors

Pilz synchronous servo motors are equipped with rotatable quick-lock plug connectors in the standard version. Details can be found in this chapter.

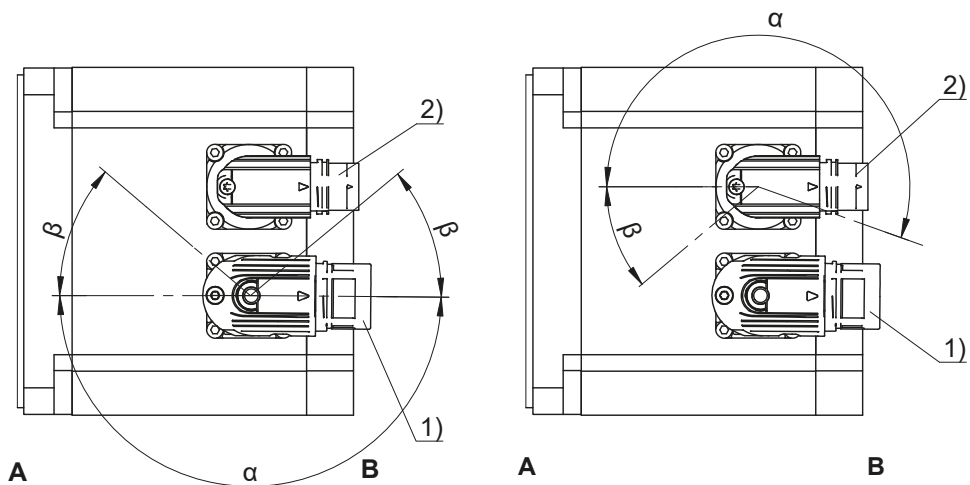
The figures represent the position of the plug connectors upon delivery.

Turning ranges of plug connectors (PMC EZ2 – PMC EZ3 motors)



- | | | | |
|---|--|---|------------------------|
| 1 | Power plug connector | 2 | Encoder plug connector |
| A | Attachment or output side of the motor | B | Not output side |

Turning ranges of plug connectors (PMC EZ4 – PMC EZ8 motors)



- | | | | |
|---|--|---|------------------------|
| 1 | Power plug connector | 2 | Encoder plug connector |
| A | Attachment or output side of the motor | B | Not output side |

Power plug connector features

Motor type	Size	Connection	Turning range	
			α	β
EZ2, EZ3	con.15	Quick lock	180°	120°
EZ4, EZ5, EZ701, EZ702, EZ703	con.23	Quick lock	180°	40°
EZ705, EZ8	con.40	Quick lock	180°	40°

Encoder plug connector features

Motor type	Size	Connection	Turning range	
			α	β
EZ2, EZ3	con.15	Quick lock	180°	120°
EZ4, EZ5, EZ7, EZ8	con.17	Quick lock	190°	35°

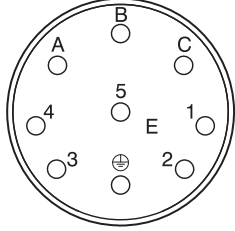

Notes

- ▶ The number after "con." indicates the approximate external thread diameter of the plug connector in mm (for example, con.23 designates a plug connector with an external thread diameter of about 23 mm).
- ▶ In turning range β , the power or encoder plug connectors can be turned only if doing so does not cause them to collide.
- ▶ For the PMC EZ2/PMC EZ3 motor, the power and encoder plug connectors are mechanically connected and can only be turned together.

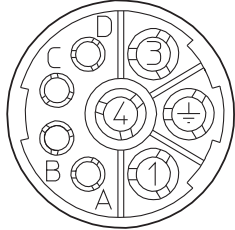

3.1 Connection assignment of the power plug connector

The size and connection diagram of the power plug connector depend on the size of the motor.

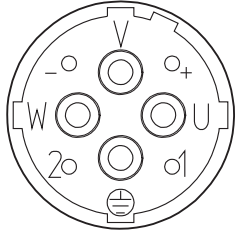

Plug connector size con.15

Connection diagram	Pin	Connection
	A	U phase
	B	V phase
	C	W phase
	1	1TP1 (temperature sensor +)
	2	1TP2 (temperature sensor -)
	3	Brake +
	4	Brake -
	5	
	Grounding conductor	

Plug connector size con.23

Connection diagram	Pin	Connection
	1	U phase
	3	V phase
	4	W phase
	A	Brake +
	B	Brake -
	C	1TP1 (temperature sensor +)
	D	1TP2 (temperature sensor -)
		Grounding conductor

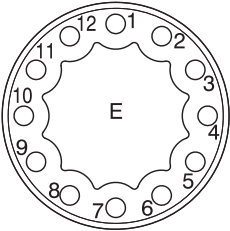
Plug connector size con.40

Connection diagram	Pin	Connection
	U	U phase
	V	V phase
	W	W phase
	+	Brake +
	-	Brake -
	1	1TP1 (temperature sensor +)
	2	1TP2 (temperature sensor -)
		Grounding conductor

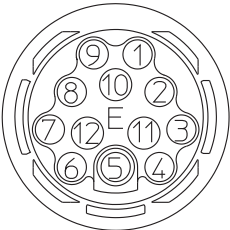
3.2 EnDat 2.2 encoder plug connector terminal assignment

The size and terminal assignment of the encoder plug connectors depend on the type of encoder installed and the size of the motor.

EnDat 2.2 digital encoder, plug connector size con.15



Connection diagram	Pin	Connection
	1	Clock +
	2	
	3	
	4	
	5	Data -
	6	Data +
	7	
	8	Clock -
	9	
	10	0 V GND
	11	
	12	Up +

EnDat 2.2 digital encoder, plug connector size con.17

Connection diagram	Pin	Connection
	1	Clock +
	2	
	3	
	4	
	5	Data -
	6	Data +
	7	
	8	Clock -
	9	
	10	0 V GND
	11	
	12	Up +

4 Forced ventilation unit

The nominal voltage of the forced ventilation unit is 230 V ± 5%, 50/60 Hz.

Connection diagram	Pin	Connection
	1	L1 (phase)
	2	N (neutral conductor)
	3	
		Grounding conductor

► Support

Technical support is available from Pilz round the clock.

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