LONGER

Baoding Longer Precision Pump Co., Ltd.

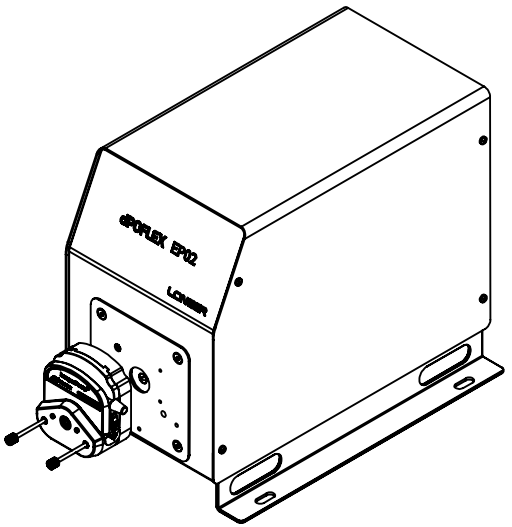
Add: 3rd/4th Floor, Building 6B, University Science Park
Baoding National, High - Tech Industrial Development Zone
Baoding, Hebei, China 071051
Tel: 86 - 312 - 3110087 3138553
Fax: 86 - 312 - 3168553
E - mail: longer@longerpump.com
Http://www.longerpump.com

Explosion-proof motor type peristaltic pump

2025.6

LONGER®
PRECISION FLUID TRANSFER

dPOFLEX EP02 Explosion-Proof Motor Peristaltic Pump Operating Manual



Baoding Longer Precision Pump Co.,Ltd.

A **Halma** company

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LONGER Instructions for use of peristaltic pump

1. General Information

Before using the pump, please read the user manual carefully and follow the safety precautions.
The upgrades, modifications or change to the pumps appearance, specification or software may occur without prior notice.

1.1 Precautions



WARNING Be aware of high-temperature surfaces. Do not touch the housing while the pump is running.

- Power must be turned off during wiring and follow the specified wiring instructions.
- After wiring is complete, ensure the motor terminal box cover is properly installed to maintain the motor's explosion-proof performance.
- If tubing leaks or bursts, fluid may spray from the tubing and pump head. Take reasonable practicable measures to ensure the operators' safety.
- Make sure fluid in the tubing has been drained out, that there is no pressure in the pipeline and disconnect pump from power, while removing or replacing the tubing.
- Do not touch the rotor while pump is running.
- Release the compression block when pump stops running for a long time to avoid tubing deformation caused by occlusion.
- Keep the rotor clean and dry to avoid tubing excessive wear and premature failure of pump head or drive.
- Please do not add the lubricating oil to the rotor by yourself, any improper operation could corrode the pump head housing or dislocate the tubing.
- Properly connect the power cable, external control cable, and communication control cable. Do not damage the plugs.
- If the pump head may not resist organic solvent and corrosive liquid, please clean the liquid left on the surface of the pump head in time.

1.2 Contacts

Baoding Longer Precision Pump Co., Ltd.
Address: Floor 3-4, Block B, Building 6, University Science Park, No. 5699 North Second Ring Road, National High-tech Industrial Development Zone, Baoding City, Hebei Province, China
Telephone: +86-312-3110087
Website: www.longerpump.com

2. Product Introduction

2.1 Main Features

- Explosion-proof AC motor: Ex d IIB T4 Gb
- Two configurations are available: single-phase and three-phase variable frequency drives (VFDs), to meet different customer needs.
- Motor with IP55 protection for wet and dusty environments.

2.2 Unpacking

(1) Remove the pump and the accessories from the shipping carton.
(2) Check the packing list to confirm all accessories are included.
(3) In case of any questions, please contact Longer Pump or the local distributor.

2.3 Applicable Pump Head and Tubing

Drive Model	Pump Head	Qty of Stacked pump head	Tubing	Reference Flow Rate (mL/min) – Single Channel
EP02 EP02-B	YZ1515x (3rollers)	4	13#,14#,19#,16#,25#,17#,18#	4-2200
	YZ1515x (6rollers)	4	13#,14#,19#,16#,25#,17#,18#	4-1450
	YZII15	4	13#,14#,19#,16#,25#,17#,18#	4-2200
	YZ2515x	4	15#,24#	100-1600
	YZII25	4	15#,24#,35#,36#	100-3000
	KZ25	2	15#,24#,35#,36#	200-6000

The flow rate was measured using water, with no suction lift and no downstream pressure.

2.4 Technical Specifications

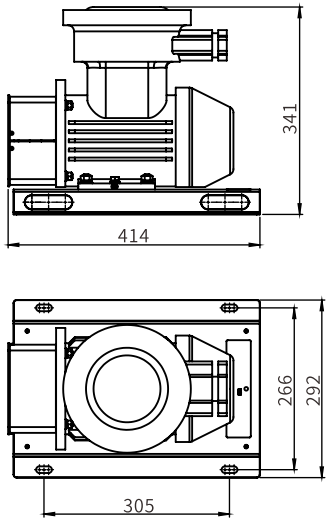
Pump Drive	Product model	dPOFLEX EP02	dPOFLEX EP02-B
	Housing material	Cast iron	304ss protective cover
	Pump speed	60rpm-600rpm	
	Control mode	Variable frequency drive (to be used outside the hazardous location)	
	Protection type	Ex d IIB T4 Gb	
	Power supply	3-phase AC 380V, or 3-phase AC 220V	
	Frequency range	5Hz-60Hz	
	Dimension (LxWxH)	414×292×340mm (without pump head)	424×292×352mm (without pump head)
	Rated power	0.18kw	
	IP rating	IP55	
	Woking condition	Temperature: 5 - 40°C, Relative humidity ⩽90%RH	
	Weight	About 40kg (without pump head)	About 45kg (without pump head)
VFD (Optional)	1-phase drive	Model: VFD4A8MS21ANSAA, input: 1-phase AC220V	
	3-phase drive	Model: VFD2A7MS43ANSAA, input: 3-phase AC380V	
	Running direction	CW / CCW	
	Speed resolution	0.01Hz	
	Display	LED	
	Control mode	Keypad control, remote control and communication control	
	External control	Output frequency could be controlled by analog signal: 0-10V, 0-20mA, 4-20mA; Manual/remote control mode, pump running direction, pump start/stop, could be controlled by digital signal	
	Status output	Output 0-20mA or 4-20mA to indicate the frequency to pump; Output relay signal to indicate pump status such as running/stop, direction or alarm	
	Communication control	RS485 interface, Modbus RTU protocol	

3. System Installation

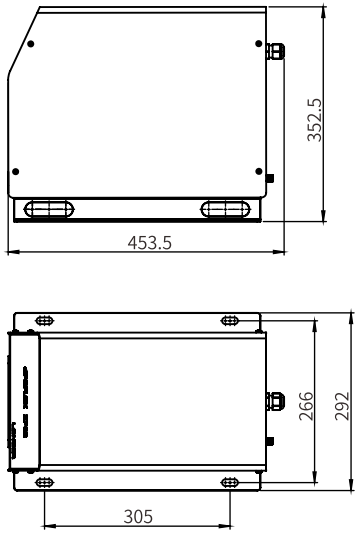
Install correctly before using the pump.

3.1 Dimensions

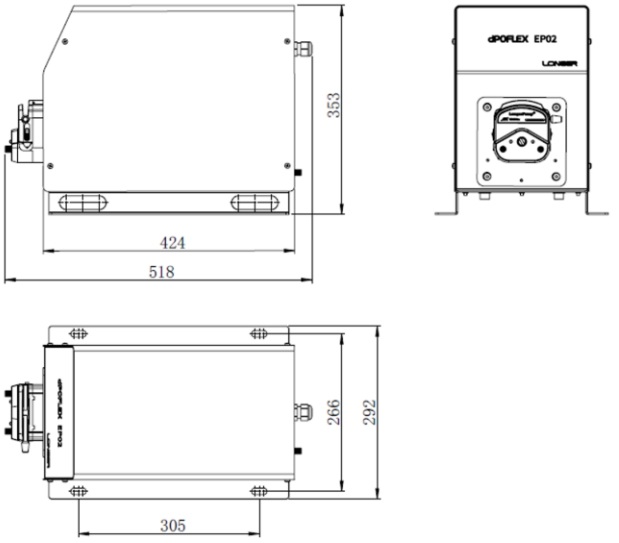
EP02(without sst housing)



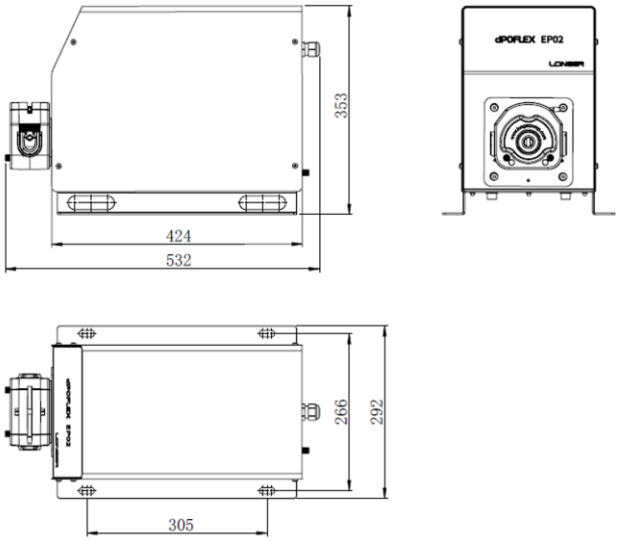
EP02-B(with sst housing)



EP02-B+YZ1515x Pump Head



EP02-B+KZ25 Pump Head



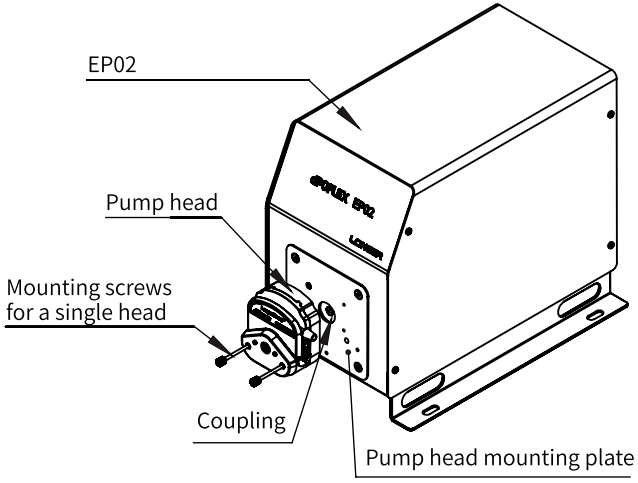
3.2 Installation of Pump Head

3.2.1

YZ1515x/ YZ2515x/ YZII15/ YZII25 Installation

3.2.1.1

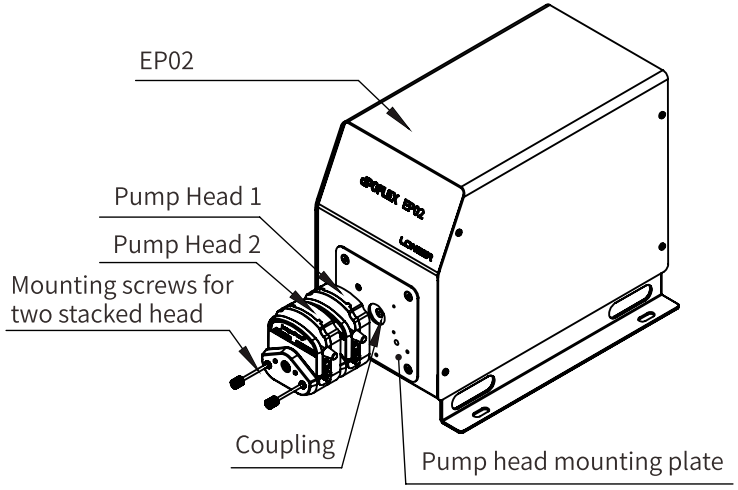
Installation of Single Pump Head



1) Insert the tang of the pump head shaft into the slot of the drive coupling.
2) Insert and tighten the two pump head mounting screws.

3.2.1.2

Installation of Stacked Pump Heads
Double-head installation as an example:



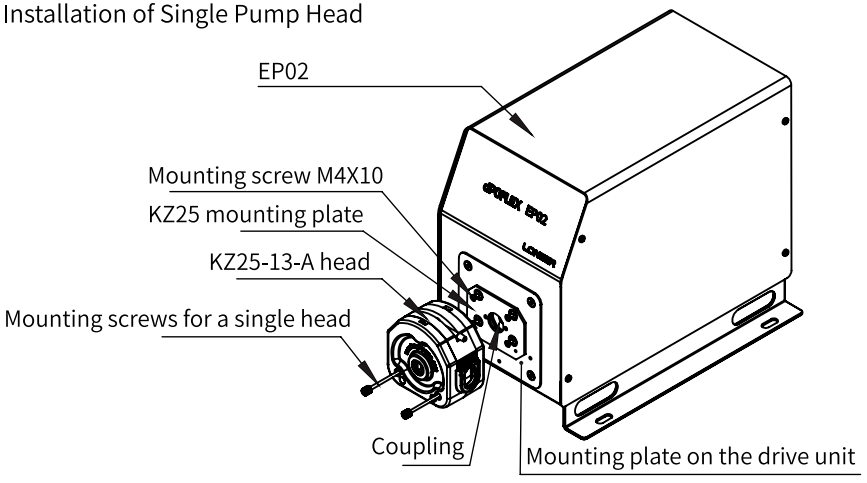
1) Insert the shaft tang of the pump head 2 into the shaft slot of the pump head 1, then insert the shaft tang of the pump head 1 into the slot of the drive coupling.
2) Insert and tighten the two pump head mounting screws.

3.2.2

KZ25 Installation

3.2.2.1

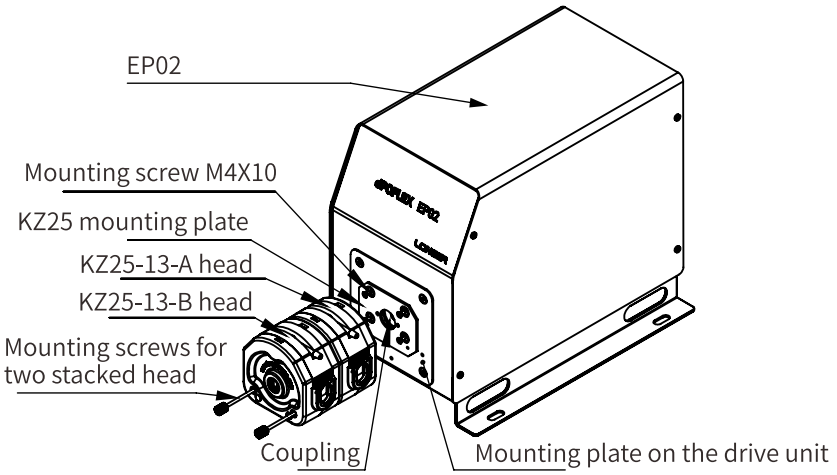
Installation of Single Pump Head



1) Mount the KZ25 mounting plate on the drive unit through tightening 4 mounting screws M4X10.
2) Insert the tang of the pump head shaft into the slot of the coupling.
3) Insert and tighten the two pump head mounting screws.

3.2.2.2

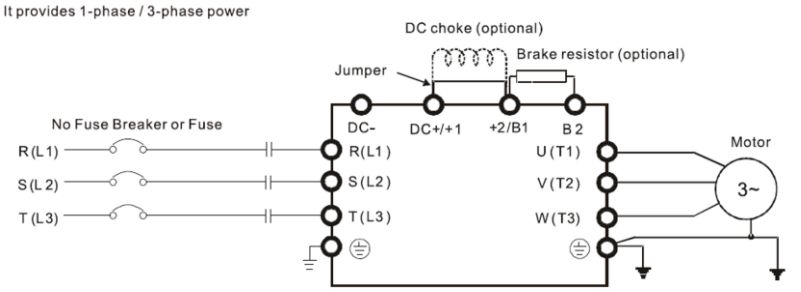
Installation of Single Pump Head



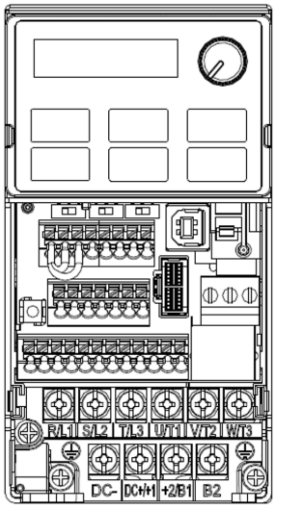
1) Mount the KZ25 mounting plate on the drive unit through tightening 4 mounting screws M4X10.
2) Insert the tang of the KZ25-13-B shaft into the slot of the KZ25-13-A shaft, then insert the tang of the KZ25-13-A shaft into the slot of the drive coupling.
3) Insert and tighten the two pump head mounting screws.

3.3 Wiring Instructions for the VFD

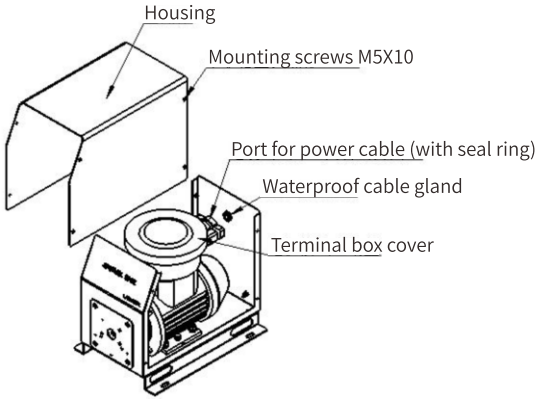
The EP02 motor is controlled by a VFD (variable frequency drive), DELTA MS300 provided by Longer Pump, or other VFDs. The wiring instructions below are for DELTA MS300. (Refer to the instruction manual of MS300 for more details)



Terminals	Descriptions
R/L1,S/L2	Mains input terminals 1-phase
R/L1,S/L2,T/L3	Mains input terminals 3-phase
U/T1,V/T2,W/T3	Motor output terminals for connecting 3-phase IM and PM motors.
+1,+2	Connections for DC reactor to improve the power factor and harmonics. The jumper needs to be removed in that case.
DC+,DC-	Connections for brake unit (VFDB series) Common DC Bus
B1,B2	Connections for brake resistor (optional)
⏚	Earth connection, please comply with local regulations.

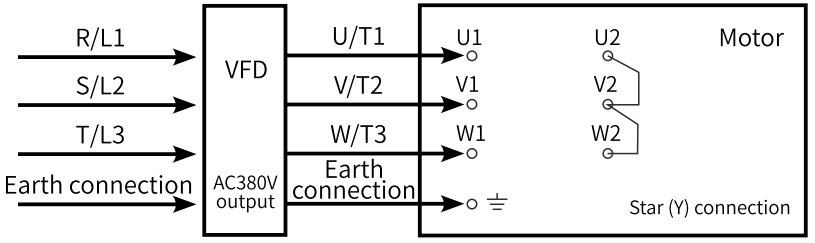


3.4 Wiring Instructions for the AC Motor

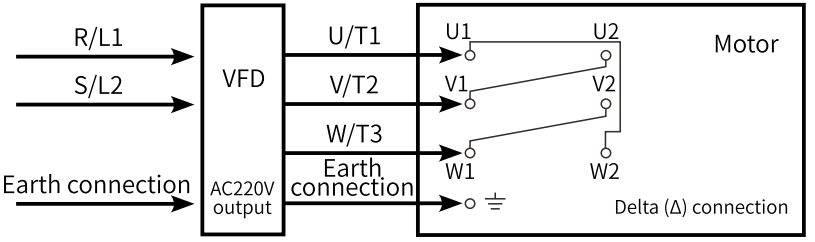


1) For the EP02-B, remove the stainless steel housing first.
2) Open the terminal box cover. Insert the power cable into the terminal box through the waterproof cable gland (EP02-B) and the power cable port.
3) Connect the power cable to the motor by Star Y (AC380V) or Delta Δ (AC220V) as below. The max OD of the cable is 25mm.

3-phase
AC380V input



1-phase
AC220V input





AC380V, Star (Y)



AC220V, Delta (Δ)

4) The max Seal the power cable port well to achieve the explosion-proof performance.
5) Connect the power cable to the VFD according to the Chapter 3.3.

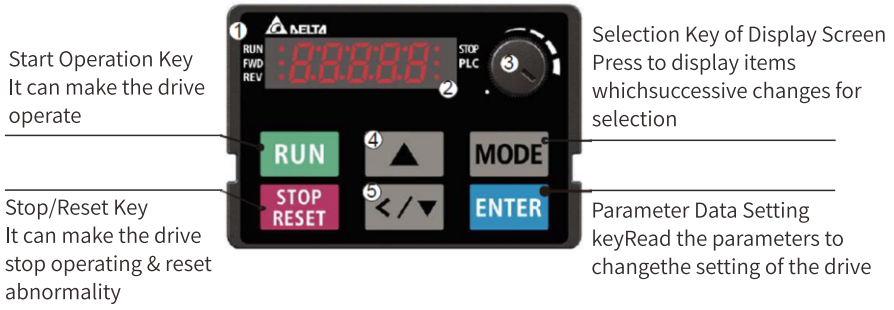
4. Operation of VFD MS300

Refer to the instruction manual of DELTA MS300 for more details.

4.1 Enable the energy-saving mode:

Enabling the energy-saving mode of the VFD can effectively reduce the motor's power consumption and lower its temperature rise during operation.
To enable the energy-saving mode: via keypad or communication command, set the VFD parameter 7-21 to 1 (enable), and set the VFD parameter 7-22 to 50 (energy-saving gain).

4.2 The Instruction of the Keypad and Display



❶ Status Display Area

Respectively displays the operation status of the drive, Operate, Stop, PLC, Forward, Reverse etc.

❷ Main Display Area

Display Frequency.Current. Voltage. Steering.User-defined Units. Abnormality etc.

❸ Frequency Setting Knob(Potentiometer)

This knob can be set as main frequency input.

❹ UP Key

It is used to change the set value and parameters.

❺ LEFT/DOWN Key

It is used to change the set value and parameters (use left key by long pressing MODE key).

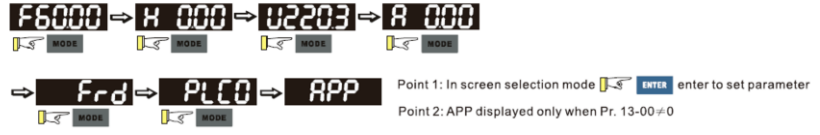
4.3 Parameters Setting

The model of VFD4A8MS21ANSAA is for AC220V power input. The model of VFD2A7MS43ANSAA is for AC380V power input. The factory default settings are:

Parameters	Instructions	Values (AC220V)	Values (AC380V)
01-00	Max operating frequency of motor	60Hz	
01-02	Output voltage of motor (V)	220	440
01-03	Mid-point frequency of motor (Hz)	3	
01-04	Mid-point voltage of motor (V)	11	22
01-09	Start-up frequency (Hz)	0.5	
01-12	Accelerate time	10s	
01-13	Decelerate time	10s	
00-02	Parameter reset	0: no function 10: all parameters are reset to factory settings (base frequency is 60 Hz)	
00-11	Control of speed mode	0: V/F (IM V/F control)	
00-16	Load selection	1: (heavy load)	
00-17	Carrier frequency (kHz)	4	

Keypad operation process

A. Main Page Selection



Setting parameters



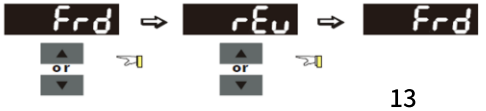
Note: In the parameter setting mode, you can press ENTER to return the selecting mode.

To shift data



Setting direction

(When operation source is digital keypad)



5. Notes of Explosion-proof Motor

5.1 Hazardous Environments

The motor is classified as Exd II B T4 Gb. It is suitable for Zone 1 and Zone 2 hazardous areas containing Group IIA and Group IIB gases (such as ethylene). Its max surface temperature does not exceed 135°C, making it compliant with temperature class T4.

Table 1: Typical gases of Group IIA and Group IIB

Group	Temperature Class	Representative Substances
IIA	T1 (⩽ 450°C)	Methane, Acetic Acid Ethyl Ester, Butane, Ethylbenzene, Benzene, Xylene, Toluene, Carbon Monoxide
	T2 (⩽ 300°C)	Naphthalene, Butanol, Butanone, Ethanol, Acetone, Benzyl Alcohol
	T3 (⩽ 200°C)	Cyclohexane, Leather Oil, Heptane, Octane, Isooctane, Kerosene, Diesel, Automotive Gasoline, Decane
IIB	T1 (⩽ 450°C)	Ethylene, Cyclopropane, Coke Oven Gas
	T2 (⩽ 300°C)	Ethylene Oxide, Ethylene Glycol Monoethyl Ether, 1,2-Dichloroethane, 1,3-Dioxolane
	T3 (⩽ 200°C)	Dimethyl Ether, Tetrahydrofuran, Methyl Acetate, Acetaldehyde, Carbon Disulfide
	T4 (⩽ 135°C)	Methyl Acrylate, Diethyl Ether, Carbon Tetrachloride

Note: When the motor operates under its specified working conditions at rated load, its max surface temperature shall comply with the limits specified in Table 2.

The temperature at the cable entry point must not exceed the allowable temperature of the cable to ensure reliable operation. The stator winding of the motor adopts an F-class insulation system, with the insulation materials rated for a max temperature of 155°C.

Table 2: Max Permissible Surface Temperature of Motor (T4)

T4		
Outdoor	W(outdoor), TAW(outdoor dry tropics), THW(outdoor humid tropics), WF1(outdoor auti-corrosion), TA(dry tropics), H(marine)	125°C
Indoor	TH(indoor humid tropics)	135°C

5.2 Key Points of Explosion-proof motor

EP02-B is equipped with a stainless steel housing, which does not influence the explosion-proof performance. The explosion-proof rating is indicated on the nameplate.

5.2.1 Before installation and use, verify that the motor's explosion-proof marking complies with the requirements of the applicable explosive gas environment.

5.2.2 Ensure that all fastening bolts are securely tightened, spring washers are in place, and all parts of the flameproof enclosure are properly connected.

5.2.3 Check that all flameproof components are free from cracks or defects that could affect explosion-proof performance (for unused new motors, disassembly inspection is not required).

5.2.4 For motors that have undergone long-distance transport or have been stored unused for a long period, the insulation resistance between the stator windings and the housing must be measured before use. The resistance must not be lower than **5 MΩ**. Otherwise, the motor must be dried until the insulation resistance meets the required value.

5.2.5 Check that the motor housing is reliably grounded or connected to the neutral line.

5.2.6 Verify that the VFD is correctly wired, that all contacts are secure, and that the VFD's metal enclosure is reliably grounded or connected to neutral.

5.2.7 Check that the supply voltage is within the normal range, and ensure it is not too high, too low, or unbalanced across the three phases.

5.2.8 Precautions during start-up:

a) If the motor does not start after power is applied, immediately disconnect the power to prevent motor burnout. Identify and correct the cause before restarting.

b) If multiple motors are powered by a single VFD, they must not be started simultaneously. Start them one by one, beginning with the largest.

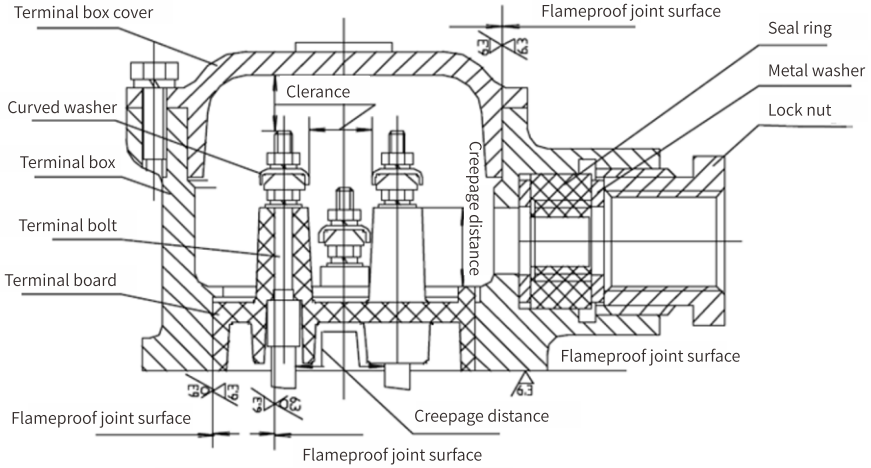
c) When starting the motor with reduced voltage, it must be under no load or light load. The motor is only allowed **two cold starts per hour** and **one hot start per hour**.

6. Appendix

6.1 Operating Environment of the Explosion-Proof Motor

Temperature: -20~+40°C
Altitude < 1000 meters
Relative humidity < 90% RH

6.2 Electrical Clearance of Explosion-Proof Motor



(Applicable to H63-71, 380V, 660V)

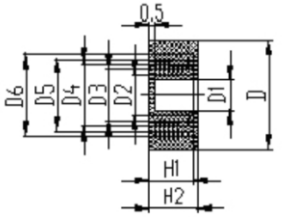
Rated Voltage (V)	175 < U < 275	275 < U < 420	420 < U < 550	550 < U < 750
Min clearance (mm)	5	6	8	10
Min creepage (mm)	6.3	10	12.5	16

Figure 2 Structure of Terminal Box

6.3 Technical Requirement for Explosion-Proof Motor Seal Ring

1. The seal ring material shall be rubber type XH-21, and its mechanical and physical properties shall comply with the requirements of GB/T7594.9.
2. The seal ring material must pass the heat resistance and cold resistance tests as specified in Clauses 26.8 and 26.9 of GB 3836.1-2010.

3. Unless otherwise specified, dimensional tolerances shall conform to GB/T 1804-m.
4. The Shore hardness of the seal ring shall be 45-55, and the end face shall indicate the minimum applicable cable outer diameter using die-casting marks, as specified in the corresponding table.



Seal Ring Spec		D	D1	D2	D3	D4	D5	D6	H1	H2
16	A	16	2	4		–	–	8	19	20
	B	-	1	2.5		–	–	6.5	–	–
20	A	20	2	6	9	–	–	12	19	20
	B	-	1	4.5	7.5	–	–	11	–	–
24	A	24	7	11	-	-	-	16	19	20
	B	-	5.5	10	-	-	-	15	-	-
28	A	28	10	14	-	-	-	18	19	20
	B	-	8.5	13	-	-	-	17	-	-
30	A	30	6	12	16	-	-	20	19	20
	B	-	4.5	11	15	-	-	19	-	-
32	A	32	12	16	-	-	-	20	19	20
	B	-	11	15	-	-	-	19	-	-
36	A	36	16	-	-	-	-	21	24	25
	B	-	15	-	-	-	-	20	-	-
42	A	42	14	20	25	-	-	30	24	25
	B	-	13	19	24	-	-	29	-	-
50	A	50	15	20	25	-	-	30	24	25
	B	-	14	19	24	-	-	29	-	-
58	A	58	14	20	26	31	-	35	24	25
	B	-	13	19	25	30	-	34	-	-
68	A	68	20	25	30	37	42	46	28	30
	B	-	19	24	29	36	41	45	-	-
72	A	72	7	20	26	32	37	42	30	32
	B	-	6	19	25	31	36	41	-	-
80	A	80	18	22	28	34	40	50	27	30
	B	-	17	21	27	33	39	49	-	-
90	A	90	25	31	36	45	-	50	36	38
	B	-	24	30	35	44	-	49	-	-
105	A	105	40	46	51	57	-	64	42	45
	B	-	39	45	50	56	-	63	-	-
115	A	115	35	45	50	65	71	86	48	50
	B	-	34	44	49	64	70	85	-	-
135	A	135	35	45	50	65	71	90		
	B	-	34	44	49	64	70	89		

Note:
A- Seal ring dimension
B- the minimum cable OD

Figure 3 Seal Ring Spec

6.4 Key Points of Flameproof Motor

6.4.1 In the structural design of the motor, full consideration has been given to preventing internal explosions caused by the intrusion of explosive mixtures from the environment from triggering external explosions. The explosion-proof performance of the motor is determined by ensuring the strength of the enclosure, controlling the gap or diameter difference and length of flameproof joints between components, and limiting the surface temperature of the enclosure from reaching hazardous levels.
The **electrical clearance** and **creepage distance** between the flameproof joint surfaces of motor components and exposed conductors inside the terminal box, as well as between exposed conductors and metal enclosures, are specified in **Appendix 6.2**.

6.4.2 To ensure the flameproof performance of the enclosure, all connecting bolts are equipped with **locking washers** to prevent loosening. After bolts or screws are tightened into blind holes, a **thread allowance** is maintained between the bolt end and the bottom of the hole.
The **metal thickness** surrounding any blind threaded hole in the enclosure shall be no less than **one-third of the thread diameter**, and in any case, **not less than 3 mm**.

6.4.3 Cables entering the motor terminal box must be sealed at the cable entry using **elastic seal rings** with a Shore hardness of **45–55°**. Dimensions for the seal rings are provided in **Appendix 6.3**, and the material must pass the **heat and cold resistance tests** as per **Clauses 26.8 and 26.9 of GB 3836.1**.
The diameter of the cable must match the inner diameter of the sealing ring. The seal ring features multiple **concentric grooves** to allow adjustment based on the cable diameter. After tightening the terminal box gland, ensure **no gaps** exist between the sealing ring and the cable or between the sealing ring and the terminal base—otherwise, explosion-proof integrity will be compromised.

6.4.4 The **insulating parts** of the terminal sleeves or terminal boards inside the terminal box shall be made from **insulating material with tracking resistance classification of level II**.

6.4.5 Grounding：Grounding is a critical safety measure to prevent sparking caused by leakage currents. The grounding terminal on the motor housing is a **steel or copper zinc-plated bolt**, positioned at a visible location on the enclosure. It is marked with a **grounding symbol:** ⏚

6.5 Common Failures and Corresponding Solutions

Common Mechanical Failures and Corresponding Solutions		
Faults	Reasons	Solutions
1. Motor vibration	1) Bearing wear, gap failure	1) Check bearing clearance
	2) Uneven air gap	2) Adjust air gap to be qualified
	3) Rotor imbalance	3) Check and clean, and then calibrate balance after fastening all bolts.
	4) Insufficient rigidity of casing	4) Solidify weakness to increase casing rigidity.
	5) Insufficient foundation intensity and uneven installation	5) Solidify foundation, level motor anchor and then fasten.
	6) Fan imbalance	6) Inspect fan, correct geometrical shape or balance.
	7) Shaft bending	7) Calibrate shaft
	8) Deformation or looseness of rotor core	8) Correct rotor core, and then reassemble it.
2. Bearing heating exceeds the specified value.	1) Excess or scarce lubricating grease	1) Fill the grease accurately according to the instruction.
	2) Impure and poor grease	2) Check for impurities, and change clean grease.
	3) Overly tight grease seal	3) Change or repair grease seal
	4) The inner cover is eccentric and rubs against the shaft.	4) Fix the inner cover of bearing and keep it a proper gap between with bearing.
	5) End caps or bearing caps on both sides of the motor are not installed evenly.	5) Correctly install the end cover or bearing cover into the rabbet, and then uniformly tighten the screws
	6) Bearing broke down, worn out and contained impurities	6) Replace the damaged bearing; Bearings with impurities should be thoroughly cleaned and the grease must be totally changed.
	7) The connection between the motor and the transmission mechanism is eccentric or the transmission belt is too tight.	7) Calibrate the center line of the connection between the motor and the transmission mechanism, and then adjust the tension of the transmission belt.
	8) Improper bearing type will overload the rolling elements.	8) Select proper type
	9) Bearing clearance is excessively large or small.	9) Exchange bearing
3. Reduction gearbox leakage	Ventilation cap blocked	Open up the rubber band

Common Electrical Failures and Corresponding Solutions		
Faults	Reasons	Solutions
1. The motor is unable to start	1) Unconnected to power supply	1) Check the switch, melt, all contact points and motor lead connector.
	2) Winding disconnection	2) Heat the disconnected part to the temperature allowed by the insulation level so as to soften the paint, pick up the disconnection, repair the broken part with the same specification wire, wrap the insulation, and then paint and dry it.
	3) Winding grounding or phase-to-phase short circuit, turn-to-turn short circuit	3) Refer to the above solution. Besides, it needs to insulate the grounding or short-circuit part before painting and drying.
	4) Winding wiring error	4) Check the wiring map, heat the ends and reconnect them correctly(including binding, insulation treatment and painting).
	5) Melt burnout	5) Look for the reason and faults, and prepare new melt according to the motor specification.
	6) Control device wiring error	6) Correct wiring
2. Melt burnout as the motor is powered	1) Single-phase starting	1) Check power cord, motor lead fuse and switch contact points, and find out the disconnection or false connection fault and repair it.
	2) The motor is overloaded or stuck.	2) Adjust the load to the rated value, and eliminate the towed mechanical failure.
	3) The melt cross-sectional area is overly small.	3) As melt is unable to protect motor overload. Generally, melt should be selected according to the following formula: rated current of melt = starting current/(2 ~ 3).
	4) The connecting wire from the power supply to the motor is short-circuited.	4) Check the short circuit place and repair it.
3. The energized motor only hums without starting	1) The motor is overloaded or stuck.	1) Check and eliminate faults
	2) The power supply is not fully connected.	2) Replace the fuse melt; fasten screws with loose terminals; check the disconnection or false connection fault of power cord with multimeter; and then repair it
	3) Low voltage	3) If the △ connection motor is mistakenly connected into Y connection, it should be revised to △ connection. When the power supply voltage is too low, the users should contact the power supply department to solve it. When the voltage drop of the power supply line is too large, a thick cable is to be used.
	4) Hard grease or tight assembly for small-type motors	4) Select proper grease and improve motor assembly

4. Energized motor casing	1) The power cord is confused with the ground cord.	1) Correct
	2) Motor winding is affected with damp, and insulation is seriously aged.	2) Dry motor and update aged insulation.
	3) The lead is grounded with the junction box.	3) Wrap or update the insulation of lead and then repair the junction box.
5. It is difficult to start the motor. The motor speed is lower than the rated speed after adding the rated load.	1) Low power supply voltage	1) Use a voltmeter or multimeter to check the power supply voltage at the input end, and then handle it.
	2) △ Connection winding is mistakenly connected into Y connection.	2) Change the Y connection back to the△ connection.
	3) Cage-typed rotor unwelds or breaks	3) Check and repair unwelding or breakage.
	4) Excessive turns after rewinding.	4) Rewind according to correct winding turns.
6. Low insulation resistance	1) Winding is affected with damp or gets wet	1) Drying treatment
	2) Winding insulation aging	2) As it is identified to be used, it can be cleaned, dried and repainted. If the insulation is aging and cannot run safely, it needs to be replaced.
7. Abnormal and noisy motor running.	1) Worn-out and faulty bearing	1) Overhaul or replace new bearing.
	2) Stator and rotor core is loose.	2) Check vibration cause, and re-press the core for treatment.
	3) High or imbalanced voltage	3) Measure the power supply voltage, find out the causes of excessive and unbalanced voltage, and handle it.
	4) Scarcely greased bearing	4) Clean the bearing and fill it with grease to make it fill up to 1/2 ~ 1/3 of the volume of the bearing chamber.
	5) Fan collides the cover or the air duct is blocked	5) Fix fan and fan cover to make it correctly sized, and then clean up the air duct.
	6) Uneven air drop, collision between stator and rotor	6) Adjust air drop and improve assembly quality.

8. Motor overheating or smoke.	1) Overly high power voltage makes the flux density of the iron core supersaturated, resulting in excessively high temperature rise of the motor.	1) If the power supply voltage exceeds the standard by a lot, the users need to contact the power supply department.
	2) The power supply voltage is too low, and the motor temperature climbs greatly under rated load.	2) If the voltage drop of the power cord is overly great, the thicker power cord can be applied. If the power supply voltage is too low, you can contact the power supply department to increase the power supply voltage.
	3) Collision between cores of stator and rotor	3) Look out for causes of the failure, and replace the bearing if its clearance exceeds the limit; If the rotating shaft is bent, it needs to be straightened. If the iron core is loose or deformed, the iron core needed to be repaired.
	4) Overloaded motor or overly great drag mechanical resistance can heat up the motor.	4) Eliminate drag mechanical faults and reduce the resistance. According to the current indication, if it exceeds rated current, there is a necessity to reduce the load, replace the motor with a larger capacity or take capacity limiting measures.
	5) The motor starts frequently or rotates forward and backward for too many times.	5) Reduce the number of motor starting, forward and reverse rotation, or replace the appropriate motor.
	6) Fan failure, poor ventilation	6) Check whether the motor fan is damaged, whether the fan blades are deformed or not fixed properly, and replace the fan if necessary.

6.6 Maintenance and Repair of Explosion-Proof Motor

6.6.1 Motors should undergo regular maintenance and repairs, typically classified into monthly maintenance (minor repair) and annual maintenance (major repair).

6.6.1.1 Contents of Monthly Maintenance (Minor Repair):

6.6.1.1.1 Clean the motor; remove dust and dirt from the external surface of the casing and measure the insulation resistance.

6.6.1.1.2 Inspect the motor terminal connections: check if the terminal bolts/nuts in the terminal box are loose; tighten them if necessary or replace them.

6.6.1.1.3 Inspect bolts/nuts of all fixed parts and the grounding wire: check grounding bolts/nuts, fasteners on the end covers and bearing covers (both inner and outer), and the condition of the grounding wire connections.

6.6.1.1.4 Inspect the motor bearings and lubrication system: check for insufficient, dried-up, or degraded grease. Replenish appropriately or clean and replace the grease if needed.

6.6.1.1.5 Check the motor fan for cracks or damage, ensure proper installation, and inspect bolts/nuts for looseness, damage, wear, or deformation. Replace if necessary.

6.6.1.2 Contents of Annual Maintenance (Major Repair):

6.6.1.2.1 Annual (major) maintenance includes all items from monthly (minor) maintenance.

6.6.1.2.2 External inspection: check for external damage, missing components, and perform thorough cleaning. Repair damaged parts and straighten deformed sections if needed.

6.6.1.2.3 Winding inspection:

(a) Check the stator and rotor windings for inter-turn short circuits, phase-to-phase short circuits, disconnections, poor soldering, or burn marks; carry out necessary repairs accordingly.

(b) Measure insulation resistance of all live components with a megohmmeter; the value should be greater than 5 MΩ.

6.6.1.2.4 Test run after repair: if the windings are intact, perform a general trial run after major repair. Measure insulation resistance, check all components for smooth operation, run the motor unloaded for 30 minutes, then operate it under load.

6.6.1.2.5 Replace the sealing ring in the motor terminal box in a timely manner if it has aged.

6.6.2 During operation, the bearing temperature should not exceed 95°C (measured with a thermometer). If any abnormal condition occurs during prolonged use, contact after-sales support for assistance and repair.