

A22系列内置式数显调速器
A22 Built-in Type Digital Speed Controller

使用说明书
Operation Instruction



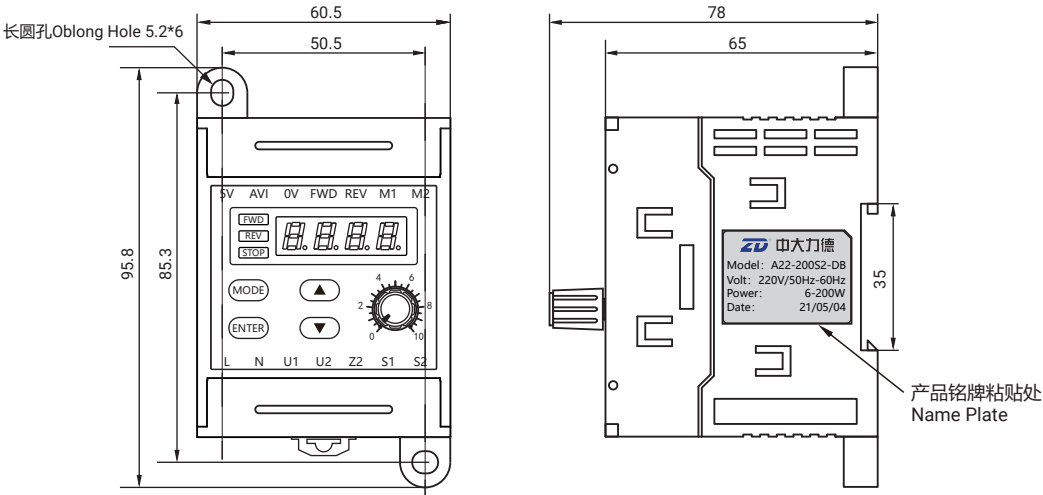
致用户 To Users:

感谢您购买并使用本产品，为保证安全及正确操作，在使用前请务必仔细阅读此说明书。
Thanks to purchase and use the product, in order to ensure safe and correct operation, please read this instruction before usage.

1 功能及特点 Features

- 采用MCU数字控制技术，功能丰富，性能优异；
Multi-function and high performance of MCU digital control technology;
- 采用数显菜单式选项，修改设定方便快捷；
Easy setting with digital display of menu;
- 可根据用户显示需要设定显示倍率，自动换算显示目标值；
Shown target value can be adjusted through magnification setting;
- 可实现缓慢加速、缓慢减速、快速停止、3段速等；
Slow acceleration & deceleration and quick stopping are capable, 3-stage speed controlling;
- 可外接开关控制、0-5V模拟量控制；
External switch controlling and 0-5V analog quantity controlling are capable;
- 模拟量控制可自动匹配最高转速，调速控制方便、安全；
Analog quantity controlling could automatically matching with max. rotation speed.
- 自动识别输入电源频率；
Automatically recognize input power frequency;
- 堵转功能保护，防止电机、调速器因堵转烧坏。（此功能可保护堵转过载，但无法保护非堵转过载）
Locked rotor protection to protect motor or speed controller to be burned due to locked rotor.

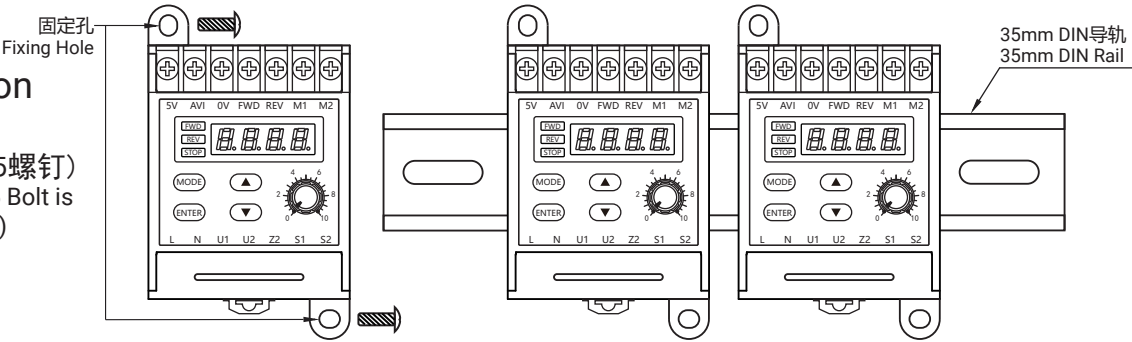
2 外形尺寸 Outline



单位Unit:mm

3 安装
Installation

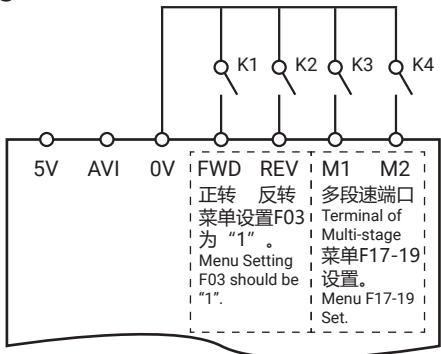
- 螺钉固定
(推荐使用M5螺钉)
Fix by bolt (M5 Bolt is recommended)
- 导轨安装
Rail Mounting



4 型号/性能参数表 Model Number/Function Specifications Table

型号 Model Number	ZDRV.A22-200S2-DB				
型号定义 How to Read	产品类型: ZDRV Model Type: ZDRV	系列: A22 Series: A22	适用最大电机功率: 200W Applicable Max. Motor Power: 200W	电源: S1单相 110V±10% S2单相 220V±10% Power Supply: S1 Single Phase 110V±10% S2 Single Phase 220V±10%	功能: D带数显 B带刹车 Function: D with digital display B with brake
适用电机功率 Applicable Motor Power	6W~200W				
适用电机类型 Applicable Motor Type	调速电机 Speed Control Motor				
安装方式 Installation Method	内置式 Built-in Type				
运动控制功能 Movement Control- ing Function	外接开关运转控制; 调速; 缓慢加速; 缓慢减速; 快速停止; 3段速 Controlled by external switch; Speed control; slow acceleration: slow deceleration; quick stopping; 3-stage speed controlling				
调速方式 Speed Control Methods	面板▲、▼按键; 面板旋钮; 0~5V模拟量 Press▲,▼button on panel; Knob on panel; 0~5V analog quantity				
调速范围 Speed Control Range	90~1700r/min (用户可根据电机级数、电源频率、使用需要设定) 90~1700r/min(User can set according to the stage of motor, frequency of power supply and required usage)				
运行电容 Run Capacitor	外置 (外置于调速电机包装内, 需用户自行连接) External installation type (Capacitor is packed with speed control motor and users should install it)				
输入电源 Input Power	单相 220V±10% ; 50Hz-60Hz Single Phase 220V±10%;50Hz-60Hz				
使用环境 Usage Environment	环境温度: -10℃~+40℃ (无冻结); 环境湿度: 85% 以下 (无结露) Environment Temperature: -10℃~+40℃(No freezing); Environment Humidity: Less than 85%(No condensation)				

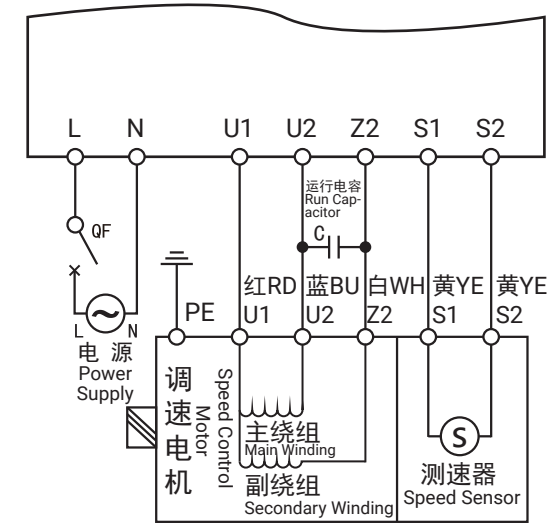
5 接线图 Diagram



● 运转控制模式 Running Control Mode

当菜单设置F03为“2”:
K1控制方向, K2控制启停。
When Menu set F02 is "2":
K1 controls direction, K2 controls Start-stop.

K1 \ K2	打开 OPEN	闭合 CLOSE
	打开 OPEN	停止 STOP
K1 \ K2	打开 OPEN	停止 STOP
	闭合 CLOSE	反转 REV
K1 \ K2	打开 OPEN	停止 STOP
	闭合 CLOSE	正转 FWD



● 运行电容C规格表
Run Capacitor C Specifications Table:

电源电压 电机功率 Power Supply Motor Power	220V	110V
6W	0.7μF/450V	2.5μF/250V
15W	1μF/450V	4μF/250V
25W	1.5μF/450V	6μF/250V
40W	2.5μF/450V	10μF/250V
60W	3.5μF/450V	14μF/250V
90W	5μF/450V	20μF/250V
120W	6μF/450V	24μF/250V
200W	10μF/450V	40μF/250V

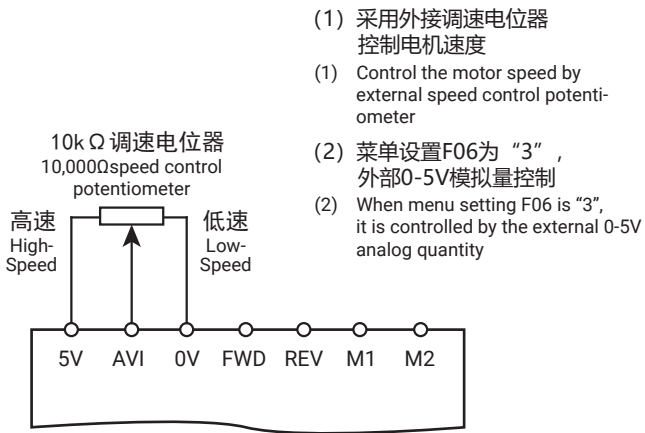
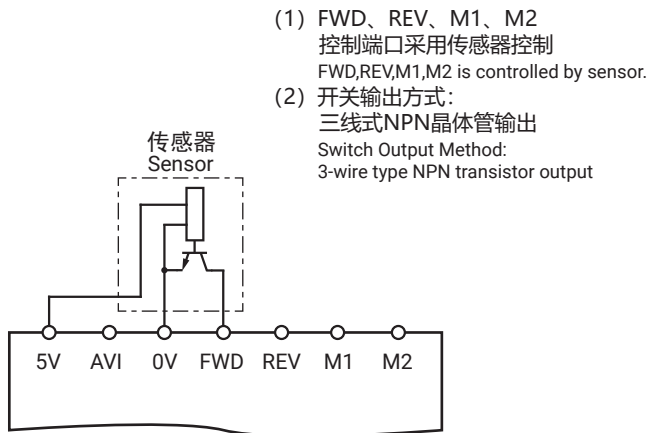
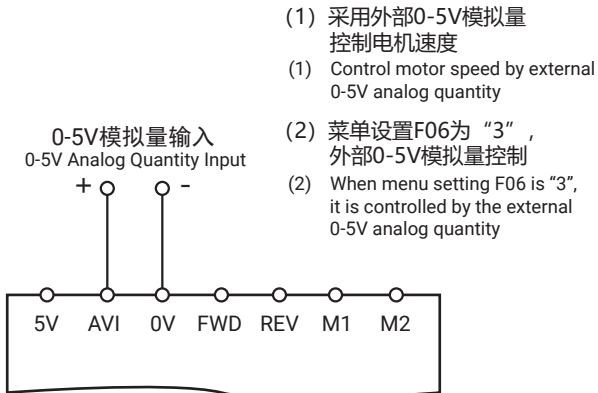
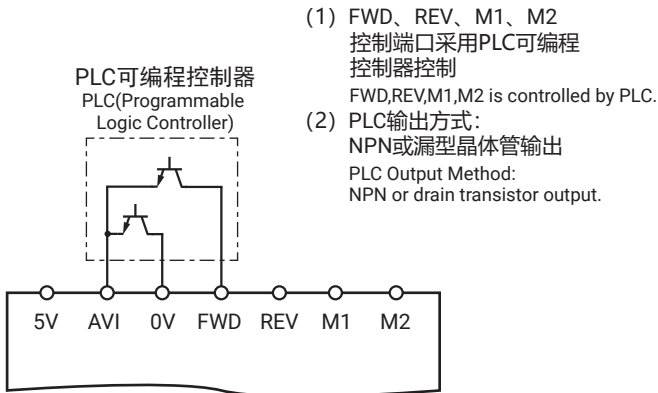
注：运行电容按电机型号配，放置于调速电机包装内。
Note: The Torque motor specifications have been referred and the run capacitor should be matched with relevant motors, it will be packed in with the torque motor.

电源电压 电机功率 Power Supply Motor Power	QF 电流规格 QF Current Specifications
220V 6-90W	1A
220V 120-200W	2A
110V 6-90W	2A
110V 120-200W	4A

● 电源 Power Supply

电源电压必须与调速器电源电压规格一致。
The voltage of the power supply should be the same with that of a speed controller.

QF为断路器，发生短路时保护调速器和电机。
QF is a circuit breaker, it can protect the speed controller and the motor in case of short-circuited.



6 调速器菜单
Speed Controller Menu

● 功能码列表 (R/W: 可读/写; RO: 只读)
Function Codes Table (R/W:Readable/Writable; RO:Read Only)

功能码 Function Code	名称 Name	参数详细说明 Detailed Parameter Description	设定范围 Setting Range	缺省值 Default Value	更改 Change
F-01	显示内容 Shown Content	1: 电机转速设定值 1: Motor Speed Setting Value 2: 倍率转速设定值 2: Magnification Speed Setting Value	1~2	1	R/W
F-02	倍率设定 Magnification Setting	倍率值1.0~999.9 Magnification Value 1.0~999.9 倍率转速设定值=电机转速设定值/倍率 Magnification Speed Setting Value =Motor Speed Setting Value/ Magnification	1.0~999.9	1.0	R/W
F-03	运转控制模式 Operation Control Mode	1: 正转/反转 1: Forward/Reverse 2: 正转/停机 2: Forward/Stop	1~2	1	R/W
F-04	旋转方式 Rotation Mode	1: 允许正反转 1: Allow to Forward and Reverse 2: 允许正转，禁止反转 2: Allow to Forward, disallow to Reverse 3: 允许反转，禁止正转 3: Allow to Reverse, disallow to Forward	1~3	1	R/W
F-05	旋转方向 Rotation Direction	1: 不取反 1: No Converse 2: 取反 2: Converse	1~2	1	R/W
F-06	调速方式 Speed Control Mode	1: 面板UP/DOWN 按键调速 1: UP/DOWN Button Speed Control on Panel 2: 面板旋钮调速 2: Knob Speed Control On panel 3: 外部模拟量 3: External Analog Quantity	1~3	1	R/W
F-07	最高转速 Max.Speed	F-08 (最低转速) ~1700 F-08(Min.Speed)~1700 限制最高转速，防止超速，发生损坏 Limit Max. Speed (exceed the limitation) to Protect it from Damage.	F-08~1700	1400	R/W
F-08	最低转速 Min. Speed	90~F-07 (最高转速) 90~F-07(Max. Speed) 限制最低转速，防止过低转速运行导致电机不稳定 Limit Min. Speed to protect it from unstable motor running.	90~F-07	120	R/W
F-09	正转启动加速时间 Start-up Acceleration Time for Forward Rotation	0.1~10.0秒 0.1~10.0s	0.1~10.0	1.0	R/W
F-10	正转停止方式 Stop Method for Forward Rotation	1: 自由停止 1: Free Stop 2: 快速停止 2: Quick stop 3: 缓慢停止 3: Slow stop	1~3	1	R/W
F-11	正转快速停机强度 Strength of Forward Quick Stopping	F-10=2时有效，参数值越大，停止越快 Effective when F-10 =2, the larger value it is, it stops faster	1~10	5	R/W
F-12	正转停止减速时间 Stop Deceleration Time for Forward Rotation	0.1~10.0秒 (F-10=3时有效) 0.1~10.0s (When F-10=3 is valid)	0.1~10.0	1.0	R/W
F-13	反转启动加速时间 Start-up Acceleration Time for Reverse Rotation	0.1~10.0秒 0.1~10.0s	0.1~10.0	1.0	R/W
F-14	反转停止方式 Stop Method for Reverse Rotation	1: 自由停止 1: Free Stop 2: 快速停止 2: Slow Stop 3: 缓慢停止 3: Slow Stop	1~3	1	R/W
F-15	反转停止减速时间 Stop Deceleration Time for Reverse Rotation	0.1~10.0秒 (F-14=3时有效) 0.1~10.0s (When F-14=3 is valid)	0.1~10.0	1.0	R/W

F-16	反转快速停机强度 Strength of Reverse Quick Stopping	F-14=2时有效，参数值越大，停止越快 Effective when F-14 =2, the larger value it is, it stops faster	1~10	5	R/W
F-17	第一段速 1st - stage speed	M1、M2选择多段速的第一段速 Select 1st -stage speed for M1, M2	F-08~F07	500	R/W
F-18	第二段速 2nd - stage speed	M1、M2选择多段速的第二段速 Select 2nd -stage speed for M1, M2	F-08~F07	800	R/W
F-19	第三段速 3rd - stage speed	M1、M2选择多段速的第三段速 Select 3rd -stage speed for M1, M2	F-08~F07	1000	R/W
F-20	电源频率设定 Power Supply Frequency Setting	1: 驱动器自动检测 1: Driver Self-detection 2: 电源频率50Hz 2: Power Supply Frequency 50Hz 3: 电源频率60Hz 3: Power Supply Frequency 60Hz	1~3	1	R/W
F-21	恢复出厂设置 Reset	1: 不恢复 1: Recover 2: 恢复 2: Do not Recover	1~2	1	R/W
F-22	当前适配电源频率 Current Adaptive Power Frequency	50: 适配50Hz交流电源 50: Adapt to 50Hz AC Power Supply 60: 适配60Hz交流电源 60: Adapt to 60Hz AC Power Supply		**	RO
F-23	驱动器内部温度 Internal Temperature of Driver	当前时刻驱动器内部温度值 Current Internal Temperature of Driver			RO
F-24	程序版本 Program Version			* **	RO

故障维护和状态显示 Trouble-shooting & Status

	名称 Name	原因 Cause	处理方法 How to Solve
故障码 Error Code	E.LOC	电机堵转故障 Motor Rotor Locked Error	检查调速器与电机的连接；检查机械故障 Check the connection of speed controller and motor; check mechanical error
	E.EEP	参数存储故障 Data Saving Error	重新上电解除警报 Re-power to clear the alarm
提示码 Prompt Code	S.run	电机当前处于运行状态，禁止修改功能码 Motor is running, any modification is prohibited.	停机后修改 Stop first and then revise
	S.not.	该按键当前处于无效状态 Function of the button is currently invalid.	修改F-04或F-06功能码 Modify F-04 or F-06 function code
	S.Err	驱动器当前处于故障状态 Driver is currently having an error.	清除故障后重试 Clear the error and re-start
	S.loc	按键当前处于上锁状态 The button is locked.	同时按下DOWN和ENTER键解锁 Press both DOWN and ENTER buttons at same time

7 菜单修改 MENU Change

- 为保证安全，请在电机停止的状态下进行修改，运行状态下不可修改。
For safety, please stop the motor and then modify. Modification is not allowed when the motor is running.



注：在驱动器处于运行或者停机界面时，同时按下MODE和ENTER两个按键，按键将处于上锁状态，按键不再具有控制电机或者进入菜单等功能；同时按下DOWN和ENTER两个按键，可以解除按键上锁状态，恢复按键功能。
Note: When the driver is running or stopping, press MODE and ENTER buttons at the same time, the buttons will be locked and won't have the functions to control the motor or enter the MENU etc.; and then press MODE and ENTER buttons at the same time, it will release the lock.

8 使用须知 Usage Instructions

- 使用前请先检查包装是否完好，铭牌和购买的型号是否一致，配件是否完整。
Check if the package is ok, nameplate is consistent with purchased model, and if you received all the accessories.
- 配件：使用说明书——1张。
Accessories: 1 Operation instruction.
- 安装、连接、检查等作业须由专业技术人员进行。
Installation, connection and inspection should be done by professional engineers.
- 请按照本说明书或上盖标识正确接线，否则可能会造成故障及危险。
Correctly wiring according to this operation instruction or label at the back cover to avoid error or danger.
- 请勿在通电状态下拆卸设备或更改接线，否则可能会造成触电。
Do not disassemble the device or change the wiring when power is on, it may cause electric shock.
- 第一次使用时，请进行空转试运行，确认功能是否正常，并调整需要使用的参数。
Before first-time usage, do run without load first to check if everything is working normally and adjust the using specification.
- 请勿在潮湿环境或可燃性、腐蚀性气体环境中使用。
Do not use in humid environments, flammable and corrosive gas environments.
- 为保证使用安全，请务必将设备接地。
Do earthing.
- 为便于理解，本说明书中使用的图片做了一定的处理，请以实物为准。
For easy understanding, photos in this instruction is for reference only, the actual products shall govern.
- 电机在正常运转状态下，电机外壳表面的温度可能会超过70℃。因此在可能触及电机的使用环境下请用户自行加贴右图所示的警告标志！
Under normal operation of the motor, sometimes the surface temperature of the motor case will exceed 70℃, therefore, please paste a warning notice (refer to the drawing below) in case people may touch the motor!

