伺服驱动器 / 无刷驱动器
工业车辆驱动器 / 交流调速器

SERVO DRIVER / BRUSHLESS DRIVER
INDUSTRIAL VEHICLE DRIVER / AC SPEED CONTROLLER

ZD® 中大力德

中大力德 实现自动化应用的无限可能

电机驱动 微特电机
精密减速器

▲ **总公司** 宁波中大力德智能传动股份有限公司

▲ **子公司** 宁波中大创远精密设备有限公司

▲ **子公司** 佛山中大力德驱动科技有限公司

宁波中大力德智能传动股份有限公司始创于1998年，是一家集电机驱动、微特电机、精密减速器、机器人结构本体及一体化智能执行单元的研发、制造、销售、服务于一体的国家高新技术企业。公司注册资本15117万元，分、子公司9家，员工1800余人，2017年8月在深交所主板上市，股票代码：002896。

公司系国家级高新技术企业，主导和参与起草国家标准12项，行业标准5项；授权专利107项，其中发明专利14项。拥有机械工业精密齿轮减速电机工程研究中心、浙江省级高新技术企业研究开发中心、浙江省级企业技术中心。

公司立足于智能化、自动化装备核心零部件设计和制造，为客户提供智能驱动解决方案。公司产品以其差异化和高性价比优势，广泛应用于工作母机、数控设备、工业机器人、智能物流、新能源、食品、包装、纺织、电子、医疗、通讯、农牧等机械装备领域。在替代进口产品的基础上，逐步参与国际竞争。

Ningbo Zhongda Leader Intelligent Transmission Co., Ltd. was founded in 1998. It is an electromechanical automation enterprise integrating R&D, manufacturing, sales and service of motor drives, micro motors, precision reducers and integrated products. It has 9 branches and subsidiaries, over 1,800 employees, and a registered capital of 151.17 million yuan. In August 2017, it was listed on the A- shares of the Shenzhen Stock Exchange (stock code 002896).

The company is a national-level high-tech enterprise, leading and participating in the drafting of 10 national standards and 5 industry standards, maintaining 107 patents and 11 invention patents. It's owning a Zhejiang-level enterprise R&D center.

The company is based on intelligent and automation equipment core component manufacturers and design solution providers. With its differentiated and cost-effective advantages, the company's products are widely used in industrial robots, intelligent logistics, new energy, machine tools and other fields, as well as special machinery and equipment for food, packaging, textiles, electronics, and medical treatment. On the basis of realizing domestic substitution of imported products, gradually participate in international competition.nd medical treatment. On the basis of realizing domestic substitution of imported products, gradually participate in international competition.

S10系列低压伺服驱动器
S10 SERIES LOW-VOLTAGE SERVO DRIVER

Z	DRV	•	S10	—	400	L	RCB
①	②		③		④	⑤	⑥

①	公司名称缩写 Company name abbreviation	Z: 中大力德 ZHONGDA LEADER				
②	产品类型 Product type	DRV: 驱动器及相关产品 Drivers and related products				
③	产品系列 Product series	S10: 低压伺服驱动器系列 Low voltage servo driver series				
④	功率等级 Power level	200	400	750	1500	2000
		200W	400W	750W	1500W	2000W
⑤	电源类型 Power supply type	S1: 单相 Single-phase AC110V/50Hz～60Hz		L: DC24V～DC48V		
		S2: 单相 Single-phase AC220V/50Hz～60Hz		L2: DC24V		
		T2: 三相 Three-phase AC220V/50Hz～60Hz		L3: DC36V		
		T3: 三相 Three-phase AC380V/50Hz～60Hz		L4: DC48V		
⑥	功能码 Function code	D: 带数字显示 With digital display				
		B: 带制动/刹车功能 With braking function				
		C: 带CanOpen通讯功能 With CanOpen communication function				
		R: 带485通讯功能 With 485 communication function				
		P: 带脉冲输入控制 With pulse input control				
		F: 带脉冲分频输出 With pulse frequency division output				

S10系列低压伺服驱动器特点
S10 series low-voltage servo driver features

- 响应速度快：速度环带宽1.2KHZ，优化前馈控制算法，提高动态响应，整定时间最优可达1m。
  Fast response speed: The speed loop width is 1.2KHZ, and the feed forward control algorithm is optimized to improve dynamic response. The optimal setting time can reach 1ms.
- 标准通讯协议：支持ModBus、CANopen通讯协议，兼容多家PLC，多台驱动器级联使用。
  Standard communication protocol: Supports ModBus and CANopen communication protocols, compatible with multiple PLC, and cascaded use of multiple drives.
- 振动抑制强。Strong vibration suppression.
- 控制精度准：支持17/23位绝对值编码器，指令跟随更精确，停止更精准，定位精度可达1um以内。
  Accurate control accuracy: Supports 17/23 bit absolute value encoders, with more precise command following and stopping, and positioning accuracy up to 1um.
- 控制模式多：轮廓位置、速度、转矩，脉冲位置、原点回零，模拟量速度、模拟量转矩。
  Multiple control modes: Contour position, speed, torque, pulse position, zero return to origin, analog speed, and analog torque.

ZDRV.S10-400L-RCB

ZDRV.S10-750L-RCB

ZDRV.S10-1K5L-RCB

ZDRV.S10-2K0L-RCB

规格 Specifications

型号参数 Model parameters		ZDRV.S10系列伺服驱动器 Series servo driver			
		ZDRV.S10-200L-RCB	ZDRV.S10-400L-RCB	ZDRV.S10-750L-RCB	ZDRV.S10-1K5L-RCB
额定输入电压 Rated input voltage		24Vdc～48Vdc			
输出电流 Output current	额定电流 (rms) Rated current	8Arms	15Arms	25Arms	40Arms
	峰值电流 (peak) Peak current	34Ap	63Ap	88Ap	141Ap
编码器 Encoder		增量式（单端或差分，5V）Incremental (Single ended or differential, 5V)			
		绝对值（RS485，5V） Absolute value (RS485, 5V)			
能耗制动 Energy consumption braking		外接制动电阻，制动电压通过软件设置 External braking resistor, braking voltage set through software			
过压报警电压 Overvoltage alarm voltage		DC65V±1V			
欠压报警电压 Under voltage alarm voltage		DC18V±1V			
过载时间 Overload time		2.5～3倍过载，最大持续5秒 2.5～3 times overload, maximum duration of 5 seconds			
冷却方式 Cooling method		自然冷却（满功率运行，需辅助散热） Free cooling (Full power operation, auxiliary heat dissipation required)			
通用功能 General functions	数字量输入 Digital input	4路，支持PNP和NPN接法，共COM1端 高电平12V～30Vdc，低电平0～5Vdc，输入阻抗5kΩ 4-way, supporting PNP and NPN connections, with a total of COM1 terminals High level 12V～30Vdc, low level 0～5Vdc, input impedance 5kΩ			
	数字量输入功能 Digital input function	根据需求，可定义为：使能、故障复位、正负限位、原点信号、原点复位使能、紧急停止、零位固定、脉冲禁止、指令方向取反等 According to requirements, it can be defined as: Enable, fault reset, positive and negative limit, origin signal, origin reset enable, emergency stop, zero position fixed, pulse prohibition, command direction reversal, etc			
	模拟量输入 Analog input	1路 1-way，-10Vdc～+10Vdc			
	模拟量输入功能 Analog input function	速度和转矩控制，可通过上位机设置 Speed and torque control, which can be set through the upper computer			
	数字量输出 Digital output	2路，OC门输出，最大工作电压30Vdc，最大电流200mA 2-way, OC gate output, maximum working voltage 30Vdc, maximum current 200mA			
	脉冲控制 Pulse control	脉冲+方向、A相+B相（默认5V，24V电平需外串电阻） Pulse+direction, A-phase+B-phase (Default 5V, 24V level requires external resistance)			
	保护功能 Protection function	欠压保护、过压保护、过载保护、软件过流保护、过温保护、硬件过流保护、失速保护、堵转保护、位置偏差过大、编码器断线保护等 Undervoltage protection, overvoltage protection, overload protection, software overcurrent protection, over temperature protection, hardware overcurrent protection, stall protection, blocking protection, excessive position deviation, encoder disconnection protection, etc			
	上位机 Upper computer	可使用485通讯连接电脑上位机软件，设置参数，抓取波形，程序升级 Can use 485 communication to connect to computer upper computer software, set parameters, capture waveforms, and upgrade programs			
	操作面板 Operation panel	可配置中大的手持操作面板，设置参数和读取数据 Configurable Zhongda handheld operation panel, setting parameters and reading data			
总线控制 Bus control	Modbus/RS485	最大支持115.2K波特率，可使用Modbus RTU协议与控制器通讯 Supports a maximum baud rate of 115.2K and can communicate with the controller using the Modbus RTU protocol			
	CANopen	最大支持1M波特率，可使用CANopen协议与控制器通讯 Supports a maximum baud rate of 1M and can communicate with the controller using the CANopen protocol			
使用环境 Usage environment	工作温度 Working temperature	-25～40℃；40度以上降额使用 Derating usage above 40 degrees Celsius			
	存储温度 Storage temperature	-10℃～70℃			
	湿度 Humidity	90%RH以下，不结露 Below 90% RH, without condensation			
	防护等级 Protection level	IP20			
	安装方式 Installation method	垂直或水平安装 Vertical or horizontal installation			
	海拔 Height	1000米以下，工作海拔在1000米以上时，每上升100米，需降额1.5%使用，最高工作海拔4000米 When the working altitude is above 1000 meters and below 1000 meters, a derating of 1.5% is required for every 100 meters increase. The maximum working altitude is 4000 meters			
	气压 Pressure	86kpa～106kpa			

S20系列高压伺服驱动器
S20 SERIES HIGH-VOLTAGE SERVO DRIVER

Z ① DRV ② • S20 ③ — 400 ④ S2 ⑤ — BCDR ⑥

①	公司名称缩写 Company name abbreviation	Z: 中大力德 ZHONGDA LEADER								
②	产品类型 Product type	DRV: 驱动器及相关产品 Drivers and related products								
③	产品系列 Product series	S20: 高压伺服驱动器系列 High voltage servo driver series								
④	功率等级 Power level	200	400	750	1000	1500	2000	3000	5000	7500
		200W	400W	750W	1000W	1500W	2000W	3000W	5000W	7500W
⑤	电源类型 Power supply type	S1: 单相 Single-phase AC110V/50Hz~60Hz				L: DC24V~DC48V				
		S2: 单相 Single-phase AC220V/50Hz~60Hz				L2: DC24V				
		T2: 三相 Three-phase AC220V/50Hz~60Hz				L3: DC36V				
		T3: 三相 Three-phase AC380V/50Hz~60Hz				L4: DC48V				
⑥	功能码 Function code	D: 带数字显示 With digital display								
		B: 带制动/刹车功能 With braking function								
		C: 带CanOpen通讯功能 With CanOpen communication function								
		R: 带485通讯功能 With 485 communication function								
		P: 带脉冲输入控制 With pulse input control								
		F: 带脉冲分频输出 With pulse frequency division output								

S20系列高压伺服驱动器特点
S20 series high-voltage servo driver features

- 响应速度快：速度环带宽1.2KHZ，优化前馈控制算法，提高动态响应，整定时间最优可达1m。
  Fast response speed: The speed loop width is 1.2KHZ, and the feed forward control algorithm is optimized to improve dynamic response. The optimal setting time can reach 1ms.
- 标准通讯协议：支持ModBus、CANopen通讯协议，兼容多家PLC，多台驱动器级联使用。
  Standard communication protocol: Supports ModBus and CANopen communication protocols, compatible with multiple PLC, and cascaded use of multiple drives.
- 振动抑制强。Strong vibration suppression.
- 控制精度准：支持17/23位绝对值编码器，指令跟随更精确，停止更精准，定位精度可达1um以内。
  Accurate control accuracy: Supports 17/23 bit absolute value encoders, with more precise command following and stopping, and positioning accuracy up to 1um.
- 控制模式多：轮廓位置、速度、转矩，脉冲位置、原点回零，模拟量速度、模拟量转矩。
  Multiple control modes: Contour position, speed, torque, pulse position, zero return to origin, analog speed, and analog torque.

ZDRV.S20-200S2-BCDR

ZDRV.S20-400S2-BCDR

ZDRV.S20-750T2-BCDR

ZDRV.S20-1K0T2-BCDR

ZDRV.S20-1K5T2-BCDR

ZDRV.S20-2K0T2-BCDR

规格 Specifications

型号参数 Model parameters		ZDRV.S20系列伺服驱动器 Series servo driver			
		ZDRV.S20-400S2-BCDR	ZDRV.S20-750T2-BCDR	ZDRV.S20-1K0T2-BCDR	ZDRV.S20-1K5T2-BCDR
额定输入电压 Rated input voltage		200Vac～240Vac			
输出电流 Output current	额定电流 (rms) Rated current	2.8Arms	4.5Arms	5.6Arms	9.5Arms
	峰值电流 (peak) Peak current	12Ap	19.1Ap	23.7Ap	40.3Ap
编码器 Encoder		绝对值（RS485，5V） Absolute value (RS485, 5V)			
能耗制动 Energy consumption braking		可选择内接或外接制动电阻，制动电压通过软件设置 Internal or external braking resistors can be selected, and the braking voltage can be set through software			
过压报警电压 Overvoltage alarm voltage		DC380V±1V			
欠压报警电压 Under voltage alarm voltage		DC200V±1V			
过载时间 Overload time		2.5～3倍过载，最大持续3秒 2.5～3 times overload, maximum duration of 3 seconds			
冷却方式 Cooling method		自然冷却（满功率运行，需辅助散热） Free cooling (Full power operation, auxiliary heat dissipation required)			风冷 Forced air cooling
通用功能 General functions	数字量输入 Digital input	9路，公共端COM+端24V电平，输入电流5mA～20mA 9-way, common terminal COM+terminal 24V level, input current 5mA～20mA			
	数字量输入功能 Digital input function	根据需求，可定义为：使能、故障复位、正负限位、原点信号、原点复位使能、紧急停止、零位固定、脉冲禁止、指令方向取反等 According to requirements, it can be defined as: Enable, fault reset, positive and negative limit, origin signal, origin reset enable, emergency stop, zero position fixed, pulse prohibition, command direction reversal, etc			
	模拟量输入 Analog input	2路 2-way，-10Vdc～+10Vdc			
	模拟量输入功能 Analog input function	速度和转矩控制，可通过上位机设置 Speed and torque control, which can be set through the upper computer			
	数字量输出 Digital output	2路，OC门输出，最大工作电压30Vdc，最大电流30mA 2-way, OC gate output, maximum working voltage 30Vdc, maximum current 30mA			
	脉冲控制 Pulse control	脉冲+方向、A相+B相（默认5V，24V电平） Pulse+direction, A-phase+B-phase (Default 5V, 24V level)			
	保护功能 Protection function	欠压保护、过压保护、过载保护、软件过流保护、过温保护、硬件过流保护、失速保护、堵转保护、位置偏差过大、编码器断线保护等 Undervoltage protection, overvoltage protection, overload protection, software overcurrent protection, over temperature protection, hardware overcurrent protection, stall protection, blocking protection, excessive position deviation, encoder disconnection protection, etc			
	上位机 Upper computer	可使用485通讯连接电脑上位机软件，设置参数，抓取波形，程序升级 Can use 485 communication to connect to computer upper computer software, set parameters, capture waveforms, and upgrade programs			
	操作面板 Operation panel	无 No			
总线控制 Bus control	Modbus/RS485	最大支持115.2K波特率，可使用Modbus RTU协议与控制器通讯 Supports a maximum baud rate of 115.2K and can communicate with the controller using the Modbus RTU protocol			
	CANopen	最大支持1M波特率，可使用CANopen协议与控制器通讯 Supports a maximum baud rate of 1M and can communicate with the controller using the CANopen protocol			
使用环境 Usage environment	工作温度 Working temperature	-25～45℃；45度以上降额使用 Derating usage above 45 degrees Celsius			
	存储温度 Storage temperature	-10℃～70℃			
	湿度 Humidity	90%RH以下，不结露 Below 90% RH, without condensation			
	防护等级 Protection level	IP20			
	安装方式 Installation method	垂直安装 Vertical installation			
	海拔 Height	1000米以下，工作海拔在1000米以上时，每上升100米，需降额1.5%使用，最高工作海拔4000米 When the working altitude is above 1000 meters and below 1000 meters, a derating of 1.5% is required for every 100 meters increase. The maximum working altitude is 4000 meters			
	气压 Pressure	86kpa～106kpa			

E20系列高压伺服驱动器
E20 SERIES HIGH-VOLTAGE SERVO DRIVER

Z	DRV	•	E20	—	400	S2	—	BCRPF
①	②		③		④	⑤		⑥

①	公司名称缩写 Company name abbreviation	Z: 中大力德 ZHONGDA LEADER			
②	产品类型 Product type	DRV: 驱动器及相关产品 Drivers and related products			
③	产品系列 Product series	E20: 高压伺服驱动器系列 High voltage servo driver series			
④	功率等级 Power level	200	400	750	1500
		200W	400W	750W	1500W
⑤	电源类型 Power supply type	S1: 单相 Single-phase AC110V/50Hz～60Hz		L: DC24V～DC48V	
		S2: 单相 Single-phase AC220V/50Hz～60Hz		L2: DC24V	
		T2: 三相 Three-phase AC220V/50Hz～60Hz		L3: DC36V	
		T3: 三相 Three-phase AC380V/50Hz～60Hz		L4: DC48V	
⑥	功能码 Function code	D: 带数字显示 With digital display			
		B: 带制动/刹车功能 With braking function			
		C: 带CanOpen通讯功能 With CanOpen communication function			
		R: 带485通讯功能 With 485 communication function			
		P: 带脉冲输入控制 With pulse input control			
		F: 带脉冲分频输出 With pulse frequency division output			

E20系列高压伺服驱动器特点
E20 series high-voltage servo driver features

- 响应速度快：速度环带宽1.2KHZ，优化前馈控制算法，提高动态响应，整定时间最优可达1m。
  Fast response speed: The speed loop width is 1.2KHZ, and the feed forward control algorithm is optimized to improve dynamic response. The optimal setting time can reach 1ms.
- 标准通讯协议：支持ModBus、CANopen通讯协议，兼容多家PLC，多台驱动器级联使用。
  Standard communication protocol: Supports ModBus and CANopen communication protocols, compatible with multiple PLC, and cascaded use of multiple drives.
- 振动抑制强。Strong vibration suppression.
- 控制精度准：支持17/23位绝对值编码器，指令跟随更精确，停止更精准，定位精度可达1um以内。
  Accurate control accuracy: Supports 17/23 bit absolute value encoders, with more precise command following and stopping, and positioning accuracy up to 1um.
- 控制模式多：轮廓位置、速度、转矩，脉冲位置、原点回零，模拟量速度、模拟量转矩。
  Multiple control modes: Contour position, speed, torque, pulse position, zero return to origin, analog speed, and analog torque.

ZDRV.E20-200S2-BCRPF

ZDRV.E20-400S2-BCRPF

ZDRV.E20-750S2-BCRPF

规格 Specifications

型号参数 Model parameters		ZDRV.E20系列伺服驱动器 Series servo driver	
		ZDRV.E20-400S2-BCR	ZDRV.E20-750S2-BCR
额定输入电压 Rated input voltage		200Vac～240Vac	
输出电流 Output current	额定电流 (rms) Rated current	3Arms	5Arms
	峰值电流 (peak) Peak current	12.7Ap	21.2Ap
编码器 Encoder		增量式（单端或差分，5V）Incremental (Single ended or differential, 5V)	
		绝对值（RS485，5V） Absolute value (RS485, 5V)	
能耗制动 Energy consumption braking		外接制动电阻，制动电压通过软件设置 External braking resistor, braking voltage set through software	
过压报警电压 Overvoltage alarm voltage		AC400V±1V	
欠压报警电压 Under voltage alarm voltage		AC200V±1V	
过载时间 Overload time		2.5～3倍过载，最大持续5秒 2.5～3 times overload, maximum duration of 5 seconds	
冷却方式 Cooling method		自然冷却（满功率运行，需辅助散热） Free cooling (Full power operation, auxiliary heat dissipation required)	
通用功能 General functions	数字量输入 Digital input	5路，支持PNP和NPN接法，共COM1端 高电平12V～30Vdc，低电平0～5Vdc，输入阻抗5kΩ 5-way, supporting PNP and NPN connections, with a total of COM1 terminals High level 12V～30Vdc, low level 0～5Vdc, input impedance 5kΩ	
	数字量输入功能 Digital input function	根据需求，可定义为：使能、故障复位、正负限位、原点信号、原点复位使能、紧急停止、零位固定、脉冲禁止、指令方向取反等 According to requirements, it can be defined as: Enable, fault reset, positive and negative limit, origin signal, origin reset enable, emergency stop, zero position fixed, pulse prohibition, command direction reversal, etc	
	模拟量输入 Analog input	1路 1-way，-10Vdc～+10Vdc	
	模拟量输入功能 Analog input function	速度和转矩控制，可通过上位机设置 Speed and torque control, which can be set through the upper computer	
	数字量输出 Digital output	3路，OC门输出，最大工作电压30Vdc，最大电流200mA 2-way, OC gate output, maximum working voltage 30Vdc, maximum current 200mA	
	脉冲控制 Pulse control	脉冲+方向、A相+B相（默认5V，24V电平需外串电阻） Pulse+direction, A-phase+B-phase (Default 5V, 24V level requires external resistance)	
	保护功能 Protection function	欠压保护、过压保护、过载保护、软件过流保护、过温保护、硬件过流保护、失速保护、堵转保护、位置偏差过大、编码器断线保护等 Undervoltage protection, overvoltage protection, overload protection, software overcurrent protection, over temperature protection, hardware overcurrent protection, stall protection, blocking protection, excessive position deviation, encoder disconnection protection, etc	
	上位机 Upper computer	可使用485通讯连接电脑上位机软件，设置参数，抓取波形，程序升级 Can use 485 communication to connect to computer upper computer software, set parameters, capture waveforms, and upgrade programs	
	操作面板 Operation panel	可配置中大的手持操作面板，设置参数和读取数据 Configurable Zhongda handheld operation panel, setting parameters and reading data	
总线控制 Bus control	Modbus/RS485	最大支持115.2K波特率，可使用Modbus RTU协议与控制器通讯 Supports a maximum baud rate of 115.2K and can communicate with the controller using the Modbus RTU protocol	
	CANopen	最大支持1M波特率，可使用CANopen协议与控制器通讯 Supports a maximum baud rate of 1M and can communicate with the controller using the CANopen protocol	
使用环境 Usage environment	工作温度 Working temperature	-25～40℃；40度以上降额使用 Derating usage above 40 degrees Celsius	
	存储温度 Storage temperature	-10℃～70℃	
	湿度 Humidity	90%RH以下，不结露 Below 90% RH, without condensation	
	防护等级 Protection level	IP20	
	安装方式 Installation method	垂直或水平安装 Vertical or horizontal installation	
	海拔 Height	1000米以下，工作海拔在1000米以上时，每上升100米，需降额1.5%使用，最高工作海拔4000米 When the working altitude is above 1000 meters and below 1000 meters, a derating of 1.5% is required for every 100 meters increase. The maximum working altitude is 4000 meters	
	气压 Pressure	86kpa～106kpa	

伺服一体机
SERVO MOTOR & DRIVER & PLANETARY GEARBOX INTEGRATED

ZDSFQDY	XXX	AS	XXX	—	XX	XX	XX	X	—	XXXXX	—	XXX
①	②	③	④		⑤	⑥	⑦	⑧		⑨		⑩

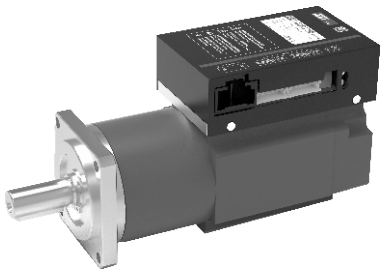
①	ZDSFQDY	中大伺服驱动一体机 Zhongda servo drive all-in-one machine		
②	电机机座号 Motor size	06: 60mm, 08: 80mm, 13: 130mm, 18: 180mm...		
③	AS系列 Series	AS: 小惯量 AS: Small inertia	AM: 中惯量 AM: Medium inertia	AL: 大惯量 AL: large inertia
④	功率等级 Power level	040: 400W, 075: 750W, 085: 850W...		
⑤	转速 (*100r/min) Speed	30: 3000r/min, 20: 2000r/min ...		
⑥	编码器 Encoder	A1: 17位单圈绝对值光编 17 bit single coil absolute value optical		
		11: 1000线增量式光编 1000 line incremental optical		
		M1: 1024线增量式磁编 1024 line incremental magnetic		
		R1: 绕线式一对极旋变 A pair of polar rotation		
⑦	制动器 Brakes	无: 省略、M: 带制动器 (24VDC) None: Omitted, M: With brake (24VDC)		
⑧	驱动器电压 Driver voltage	C: 单相 Single-phase 220V Single-phase 220V		
		S: 三相 Three-phase 220V Three-phase 220V		
		S3: 三相 Three-phase 380V Three-phase 380V		
		24: 24VDC		
		48: 48VDC		
⑨	减速器加速比 Reducer acceleration ratio	78ZA9: 行星ZA速比9... (此项没有表示无减速机) Planetary ZA speed ratio of 9... (This item does not indicate that there is no speed reducer)		
⑩	驱动器的特征码 The feature code of the driver	B: 带制动电阻 With brake resistance		
		C: CAN通讯功能 CAN communication function		
		R: 485通讯功能 485 communication function		
		S: STO功能 STO function		

● **注** ⑥ pour

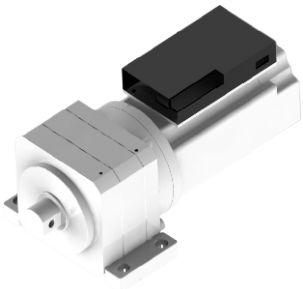
编码器 Encoder	A1	17位单围绝对值光电编码器 17-digit single circumference absolute photoelectric encoder
	I2	2500线增量式光电编码器 A 2,500-line incremental photoelectric encoder

伺服一体机的特点
Features of servo motor & driver&planetary gearbox integrated

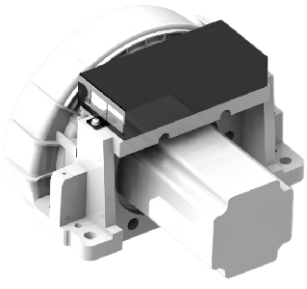
- 体积小。Small volume.
- 传动效率高。High transmission efficiency.
- 接线简单。Simple connection.
- 应用方便。Convenient application



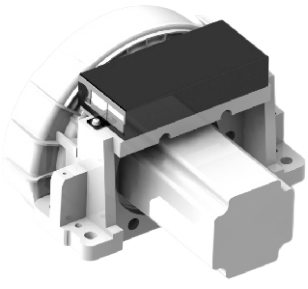
ZDSFQDY06AM040-30M2N48-60ZDF32-CR



ZDSFQDY08AM060-15M2M48-090AGV80-CR



ZDSFQDY08AM075-30M2N48-115AGV21-CR



ZDSFQDY08AM075-30M2N48-115AGV21-BCRS

规格 Specifications

型号参数 Model parameters		伺服一体机—驱动器 Servo motor & driver&planetary gearbox integrated		
		ZDSFQDY06AM040-30M2N48 -60ZDF32-CR	DSFQDY08AM060-15M2M48- 090AGV80-CR	ZDSFQDY08AM075-30M2N48 -115AGV21-CR ZDSFQDY08AM075-30M2M48 -115AGV21-BCRS
额定控制电输入电压 Rated control electrical input voltage		48VDC		
额定功率电输入电压 Rated power electrical input voltage		48VDC		
输出电流 Output current	额定电流 (rms) Rated current	12Arms	18Arms	22Arms
	峰值电流 (peak) Peak current	50.4Ap	75.6Ap	92.4Ap
编码器 Encoder		增量式（差分，2500线磁编）Incremental (Differential, 2500 line)		
能耗制动电阻 Energy-consumption brake resistance		无 No	无 No	5Ω, 60W
泄放电阻 leak resistance		无 No	无 No	1Ω, 50W
能耗制动电压 Energy-consumption brake voltage		DC60V±1V		
过压报警电压 Overvoltage alarm voltage		DC65V±1V		
欠压报警电压 Under voltage alarm voltage		DC40V±1V		
过载时间 Overload time		2.5～3倍过载，最大持续3秒 2.5～3 times overload, maximum duration of 3 seconds		
冷却方式 Cooling method		自然冷却 Free cooling		
通用功能 General functions	数字量输入 Digital input	2路，支持PNP和NPN接法，共COM1端，高电平12V～24VDC 2 way, support PNP and NPN connection, total COM1 terminal, High level 12V～24VDC		
	数字量输出 Digital output	1路，OC门输出，最大工作电压30VDC，最大电流150mA 1-way, OC gate output, maximum working voltage 30VDC, maximum current 150mA		
	保护功能 Protection function	欠压保护、过压保护、过载保护、软件过流保护、过温保护、硬件过流保护、失速保护、堵转保护、位置偏差过大、编码器断线保护等 Undervoltage protection, overvoltage protection, overload protection, software overcurrent protection, over temperature protection, hardware overcurrent protection, stall protection, blocking protection, excessive position deviation, encoder disconnection protection, etc		
	上位机 Upper computer	可使用485通讯连接电脑上位机软件，设置参数，抓取波形，程序升级 Can use 485 communication to connect to computer upper computer software, set parameters, capture waveforms, and upgrade programs		
	CANopen	最大支持1M波特率 Maximum support of 1M wave rate		
使用环境 Usage environment	工作温度 Working temperature	-25～40℃；40度以上降额使用 Derating usage above 40 degrees Celsius		
	存储温度 Storage temperature	-10℃～70℃		
	湿度 Humidity	90%RH以下，不结露 Below 90% RH, without condensation		
	防护等级 Protection class	IP20		
	海拔 Height	1000米以下，工作海拔在1000米以上时，每上升100米，需降额1.5%使用，最高工作海拔4000米 When the working altitude is above 1000 meters and below 1000 meters, a derating of 1.5% is required for every 100 meters increase. The maximum working altitude is 4000 meters		
	气压 Pressure	86kpa～106kpa		

规格 Specifications

型号参数 Model parameters	伺服一体机—电机 Servo motor & driver & planetary gearbox integrated		
	ZDSFQDY06AM040-30M2N48 -60ZDF32-CR	ZDSFQDY08AM060-15M2M48 -090AGV80-CR	ZDSFQDY08AM075-30M2N48 -115AGV21-CR ZDSFQDY08AM075-30M2M48 -115AGV21-BCRS
输出功率 Output power	400W	600W	750W
极数 Number of poles	10	8	8
额定电压 Rated voltage	48VDC	48VDC	48VDC
额定转速 Rated speed	3000RPM	1500RPM	3000RPM
最高转速 Maximum speed	4000RPM	2000RPM	4500RPM
额定扭矩 Rated torque	1.27N.m	3.82N.m	2.38N.m
力矩系数 Torque coefficient	/	0.21N.m/Arms	0.125N.m/Arms
转子转动惯量 Rotor inertia	/	$0.19*10^{-3}kgm^2$	$0.18*10^{-3}kgm^2$
线电阻 Line resistance	0.056Ω	0.34Ω	0.084Ω
线电感 Linear inductance	0.14mH	0.99mH	0.31mH
反电势系数 Back electromotive force coefficient	11V/Krpm	14.5V/KRPM	7.3V/KRPM
额定电流 Rated current	12A	18A	22A
工作制 Working duty	1min	S2 (5min)	S2 (60min)
绝缘等级 Insulation class	F级 Level	F级 Level	F级 Level
防护等级 Protection class	IP20	IP20	IP20
环境温度 Ambient temperature	0-+40℃	0-+40℃	0-+40℃
编码器 Encoder	2500线磁编 Linear magnetic braiding	2500线磁编 Linear magnetic braiding	2500线磁编 Linear magnetic braiding
减速比 Reduction ratio	32:1	80:1	21:1
减速级数 Gearbox stage	/	2	2
额定输出扭矩 Rated output torque	/	180N.m	45N.m
容许径向负荷 Permissible radial load	/	10249N	8000N
容许轴向负荷 Allowable axial load	/	3300N	2000N
回程间隙 (arcmin) Backlash	≤10	≤25	≤25
减速器额定扭矩 Rated torque of reducer	38N.m	38N.m	/
瞬间承受最大扭矩 Instantly withstand maximum torque	两倍于额定扭矩 Twice the rated torque	/	/
传动效率 Transmission efficiency	94%	/	/
噪音 Noise	≤65dB(A) 100cm	≤65dB(A) 100cm	≤65dB(A) 100cm

C10系列无刷驱动器
C10 SERIES BRUSHLESS DRIVERS

Z	BLD	•	C10	—	120	L/H/S2	D/X
①	②		③		④	⑤	⑥

①	公司名称 Company	Z: 中大力德 ZHONGDA LEADER	
②	类型 Type	BLD: 无刷电机驱动器 Motor driver	
		DRV: 驱动器及相关产品 Driver and related products	
③	版本 Version	C10: C10、C13系列 Series	
④	功率 Power	120	200
		120W	200W
⑤	电压 Voltage	L: 低压DC24V～48V Low voltage	L2: 低压DC24V Low voltage
		H/S2: 高压 High voltage AC220V/50Hz	
⑥	功能 Feature	D: 带数字显示 With display	
		X: 扩展功能 With extended function	

ZBLD.C10-200L

PRODUCT DIAGRAM

C10系列产品示意图

包括六款：

ZBLD.C10-200L
ZDRV.C10-200L-D
ZDRV.C10-200S2-D
ZDRV.C20-200L-DR
ZDRV.C20-200S2-DR
ZBLD.C10-400L

ZDRV.C10-200S2-D

ZDRV.C20-200L-DR

ZDRV.C20-200S2-DR

● ZDRV.C13-90L2

● ZDRV.C13-120S2

C10系列无刷驱动器特点
Features of C10 series brushless motor driver

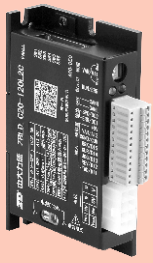
- 数字显示：采用4位数码管显示：运行状态、设定速度、运行速度、故障指示。
  Digital display: 4-digit digital tube display: running status, set speed, running speed, fault indication.
- 稳速运行：采用速度闭环控制（控制精度±0.5%）。
  Stable speed operation: adopt speed closed-loop control (control accuracy ±0.5%).
- 输入输出：2组NPN型数字输入接口（正转和反转）；1组开漏型数字输出接口（故障输出）。
  Input and output: 2 groups of NPN type digital input interfaces (forward and reverse); 1 group of open-drain digital output interfaces (fault output).
- 速度给定：通过面板旋钮设定运行速度，方便快捷。
  Speed setting: Set the running speed through the panel knob, which is convenient and quick.
- 完善的故障检测及保护功能：1、欠压、过压、过流、过载、堵转、短路、缺相、过温等多种故障检测；2、故障发生后，驱动器根据故障类型进行相应的保护动作；3、故障信息可通过数码管进行显示。
  Perfect fault detection and protection functions: 1. Various fault detections such as undervoltage, overvoltage, overcurrent, overload, locked rotor, short circuit, phase loss, overtemperature, etc.; 2. After the failure occurs, the drive carries out corresponding protection actions according to the type of failure; 3. The fault information can be displayed through the digital tube.
- 扩展功能包括：扩展3组NPN型数字量输入接口、1组模拟量接口、1组485通讯控制接口。
  Extended functions include: expansion of 3 sets of NPN digital input interfaces, 1 set of analog quantity interfaces, and 1 set of 485 communication control interfaces.

C20系列无刷驱动器
C20 SERIES BRUSHLESS DRIVERS

Z	BLD	•	C20	—	120	L/H/S2	C/R
①	②		③		④	⑤	⑥

①	公司名称 Company	Z: 中大力德 ZHONGDA LEADER		
②	类型 Type	BLD: 无刷电机驱动器 Brushless driver		
		DRV: 驱动器及相关产品 Driver and related products		
③	版本 Version	C20: C20系列 Series		
④	功率 Power	120	400	800
		120W	400W	800W
⑤	电压 Voltage	L: DC24V～48V (L1:12V; L2:24V; L3:36V; L4:48V)		
		H/S2: 高压 High voltage AC220V		
⑥	功能 Feature	C: CAN通信 Can communication		
		R: 带485通讯 485 communication		

C20系列产品压意图 PRODUCT DIAGRAM



ZDRV.C20-120S2-R
ZDRV.C20-200S2-R
ZDRV.C20-750S2-R

ZBLD.C20-400HR

ZBLD.C20-400LR

ZBLD.C20-800LRC

键盘ZBLD.C20-KB5T-U

ZDRV.C21-200L-R

C20系列无刷驱动器特点 Features of C20 series brushless motor driver

- 多种运行方式：开环、闭环（控制精度±0.5%）。
  A variety of operating modes: open-loop, closed-loop (control accuracy ±0.5%).
- 多种命令给定：多功能输入端子控制、通讯控制、外置键盘控制。
  Multiple commands given: multi-function input terminal control, communication control, external keyboard control.
- 多种速度给定：内置旋钮、外部模拟电压（0～5/10V）或PWM（3k～10kHz）、HDI高速脉冲输入0～20KHZ频率给定、通讯给定、键盘给定、多段速度、简易PLC控制（视具体型号而定）。
  Various speed settings: built-in knob, external analog voltage (0～5/10V) or PWM (3k～10kHz), HDI high-speed pulse input 0～20KHZ frequency setting, communication setting, keyboard setting, multi-speed, Simple PLC control (depending on the specific model).
- 加/减速度控制：0.3s～10s范围，可通过旋钮调节、通讯调节和键盘调节。
  Acceleration/deceleration control: 0.3s～10s range, can be adjusted by knob, communication adjustment and keyboard adjustment.
- 电子刹车功能：实现快速电磁制动。
  Electronic brake function: realize fast electromagnetic braking.
- 多功能输入接口：5个数字量输入，用户可通过键盘自定义为：正转、反转、点动、自由停止、电子刹车、多段速度等多种功能输入。
  Multi-function input interface: 5 digital inputs, which can be customized by the user through the keyboard: forward, reverse, jog, free stop, electronic brake, multi-speed and other functional inputs.
- 多功能输出接口：2个数字量输出用户可通过键盘自定义为：运行中、故障、速度输出、过载预警、虚拟端子输出等多种功能输出。
  Multi-function output interface: 2 digital outputs can be customized by the user through the keyboard: running, fault, speed output, overload warning, virtual terminal output and other functional outputs.
- 完善的故障检测及保护功能：欠压、过压、过流、过载、堵转、短路、缺相、过温等多种故障检测；故障发生后，驱动器根据故障类型进行相应的保护动作；故障信息可通过LED灯或键盘进行显示。
  Perfect fault detection and protection functions: under-voltage, over-voltage, over-current, overload, locked-rotor, short-circuit, phase-loss, over-temperature and other fault detection; after a fault occurs, the driver performs corresponding protection actions according to the type of fault; Fault information can be displayed by LED lights or keyboard.

键盘配件：外引键盘可用于设置驱动器参数、读取驱动器状态，实现键盘控制、多功能输入、多功能输出、多段速度、简易PLC等功能。
Keyboard accessories: The external keyboard can be used to set parameters, read status, realize keyboard control, multi-function input, multi-function output, multi-speed, simple PLC and other functions. function input, multi-function output, multi-speed, simple PLC and other functions.

C30系列无刷驱动器
C30 SERIES BRUSHLESS DRIVERS

Z	DRV	•	C30	—	200	L/S2	B/C/R
①	②		③		④	⑤	⑥

①	公司名称 Company	Z: 中大力德 ZHONGDA LEADER	
②	类型 Type	DRV: 驱动器及相关产品 Driver and related products	
③	版本 Version	C30: C30系列 Series	
④	功率 Power	200	400
		200W	400W
⑤	电压 Voltage	L: DC24V～48V (L1:12V; L2:24V; L3:36V; L4:48V)	
		S2: 高压 High voltage AC220V	
⑥	功能 Feature	B: 带制动/刹车 With brake	
		R: 带485通讯 With 485 communication	
		C: CAN通信 With Can communication	
		D: 带数字显示 With display	

PRODUCT DIAGRAM
ZDRV.K10-ENT 产品示意图

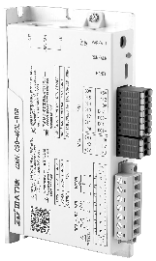
应用于：ZDRV.C30-200L-BCR
ZDRV.C30-400L-BCR

C30系列无刷驱动器特点
Features of C30 series brushless motor driver

- 多种运行方式：开环、闭环（控制精度±0.5%）。
  Multiple operation modes: open-loop, closed-loop (control accuracy ±0.5%).
- 多种控制方式：四象限运行、零速保持、力矩/速度模式、零速定位。
  Multiple control modes: four-quadrant operation, zero-speed hold, torque/speed mode, zero-speed positioning.
- 多种命令给定：多功能输入端子控制（支持NPN、PNP输入）；通讯控制；外置键盘控制。
  A variety of command given: multi-function input terminal control (support NPN, PNP input); communication control; external keyboard control.
- 多种速度给定：内置旋钮、外部模拟电压（0～5/10V）或PWM（3k～10kHz）、HDI高速脉冲输入0～20KHZ频率给定、通讯给定、键盘给定、多段速度、简易PLC控制（视具体型号而定）。
  Various speed settings: built-in knob, external analog voltage (0～5/10V) or PWM (3k～10kHz), HDI high-speed pulse input 0～20KHZ frequency setting, communication setting, keyboard setting, multi-speed, Simple PLC control (depending on the specific model).
- 加/减速度控制：0.3s～10s可通过通讯调节和键盘调节。
  Acceleration/deceleration control: 0.3s～10s can be adjusted by communication and keyboard.
- 电子刹车功能：实现快速电磁制动，可外接能耗电阻制动。
  Electronic brake function: realize fast electromagnetic braking, and external energy consumption resistance braking can be realized.
- 多功能输入接口：5个数字量输入（支持NPN和PNP）用户可通过键盘自定义为：正转、反转、点动、自由停止、电子刹车、多段速度等多种功能输入。

ZDRV.C30-200L-BCR

ZDRV.C30-400L-BCR



Multi-function input interface: 5 digital inputs (supports NPN and PNP), which can be customized by the user through the keyboard: forward, reverse, jog, free stop, electronic brake, multi-speed and other functional inputs.

- 多功能输出接口：2个数字量输出用户可通过键盘自定义为：运行中、故障、速度输出、过载预警、虚拟端子输出等多种功能输出。
  Multi-function output interface: 2 digital outputs can be customized by the user through the keyboard: running, fault, speed output, overload warning, virtual terminal output and other functional outputs.
- 完善的故障检测及保护功能：欠压、过压、过流、过载、堵转、短路、缺相等多种故障检测；故障发生后，驱动器根据故障类型进行相应的保护动作；故障信息可通过LED灯或键盘进行显示。
  Perfect fault detection and protection functions: under-voltage, over-voltage, over-current, overload, locked rotor, short-circuit, lack of etc. fault detection; after a fault occurs, the driver will perform corresponding protection actions according to the type of fault; fault information can be passed through LED lights or keyboard display.

C40系列无感变频驱动器
C40 SERIES NON-INDUCTIVE VARIABLE FREQUENCY DRIVE

Z ① DRV ② • C40 ③ — 400 ④ L ⑤ — R ⑥

①	公司名称缩写 Company name abbreviation	Z: 中大力德 ZHONGDA LEADER	
②	产品类型 Product type	DRV: 驱动器及相关产品 Drivers and related products	
③	产品系列 Product series	C40: 无感驱动器系列 Non-inductive driver series	
④	功率等级 Power level	低压 Low pressure: 120:120W 200:200W 400:400W 800:800W	
		高压 High pressure: 120:120W 200:200W 400:400W 750:750W 1100:1100W 1500:1500W 2200:2200W	
⑤	电源类型 Power supply type	S2: 单相 Single-phase AC220V/50Hz~60Hz	L: DC24V~DC48V
⑥	功能码 Function code	D: 带数字显示 With digital display	
		B: 带制动/刹车功能 With braking function	
		R: 带485通讯功能 With 485 communication function	

ZDRV.C40-400L-R

ZDRV.C40-400S2-BR
ZDRV.C40-200S2-BR

ZDRV.C40-750S2-BR

C40系列无感变频驱动器特点
Features of C40 series non-inductive variable frequency drive

- 只需三根电机动力线：从根本上避免电机编码器线或霍尔信号线的连接不可靠、信号被干扰等问题，可有效提升系统的可靠性。
  Only three motor power lines are needed: fundamentally avoiding problems such as unreliable connection of motor encoder lines or Hall signal lines and signal interference, which can effectively improve the reliability of the system.
- 无需电机编码器或霍尔传感器：采用高性能无位置传感器方案，实现电机的正弦波FOC矢量控制，节省了编码器或霍尔的线束和端子，有效降低系统的整体成本。
  No need for motor encoder or Hall sensor: Adopting a high-performance position sensorless solution, achieving sine wave FOC vector control of the motor, saving the wiring harness and terminals of the encoder or Hall, effectively reducing the overall cost of the system.
- 低速性能好：优秀的速度闭环控制性能，最低转速可达20rpm，调速比可以与带编码器电机驱动器相媲美。
  Good low-speed performance: Excellent speed closed-loop control performance, with a minimum speed of up to 20rpm, and a speed ratio comparable to motor drives with encoders.
- 支持大负载带载启动：最大允许150%电机额定负载转矩条件下带载启动；如需更大负载转矩条件下带载启动，可与我司沟通产品定制事宜。
  Support heavy load on-load starting: maximum allowable on-load starting at 150% of the rated load torque of the motor; If you need to start with load under higher load torque conditions, you can communicate with our company about product customization matters.
- 支持超长距离电机控制：本产品与电机间三相动力线的最长允许距离为100米如需支持更长距离，可与我司沟通产品定制事宜。
  Support for ultra long distance motor control: The maximum allowable distance for the three-phase power line between this product and the motor is 100 meters. If you need to support a longer distance, you can communicate with our company about product customization matters.
- 速度波动小：额定转速条件下速度波动大约为1%优异的稳速性能可以媲美带编码器电机，满足绝大部分应用的需求。
  Low speed fluctuation: Under rated speed conditions, the speed fluctuation is about 1%, and the excellent speed stability performance can be comparable to motors with encoders, meeting the needs of the vast majority of applications.
- 可支持超高速电机：支持电机最高转速可达30000rpm，如需支持更高电机转速，可与我司沟通定制。
  Can support ultra high speed motors: supports a maximum motor speed of up to 30000 rpm. If you need to support higher motor speeds, you can communicate with our company for customization.
- 适用性强：拥有强大的电机参数自动识别功能:本产品与各个厂商各类无霍尔直流无刷电机、无编码器永磁同步电机均可适配。
  Strong applicability: With powerful automatic recognition function for motor parameters, this product can be compatible with various manufacturers of Hall free DC brushless motors and encoder free permanent magnet synchronous motors.
- 具有制动电路，可以快速启停。
  Equipped with a braking circuit that can quickly start and stop.

规格 Specifications

型号参数 Model parameters		C40无感变频驱动器 non-inductive variable frequency drive				
		C40-200L-R	C40-400L-R	C40-200S2-BR	C40-400S2-BR	C40-750S2-BR
额定输入电压 Rated input voltage		24V/48V		AC220V (±20%)		
输出电流 Output current	额定电流 (rms) Rated current	7.5Arms	15Arms (注1)	1.4Arms	2.8Arms	4.3Arms
	峰值电流 (peak) Peak current	21Ap	42Ap	4Ap	8Ap	12.2Ap
编码器 Encoder		无 No				
能耗制动 Energy consumption braking		外接制动电阻，制动电压通过软件设置 External braking resistor, braking voltage set through software				
过压报警电压 Overvoltage alarm voltage		DC65V以上 Above		DC390V以上 Above		
欠压报警电压 Under voltage alarm voltage		DC18V以下 Below		DC200V以下 Below		
过载时间 Overload time		2倍过载，最大持续20s 2 times overload, maximum duration of 20 seconds	2倍过载，最大持续10s 2 times overload, maximum duration of 10 seconds	1.5～2倍倍过载，持续时间3～15s 1.5 to 2 times overload, lasting for 3 to 15 seconds	2倍过载，最大持续10s 2 times overload, maximum duration of 10 seconds	2倍过载，最大持续15s 2 times overload, maximum duration of 15 seconds
冷却方式 Cooling method		自然冷却 Free cooling	辅助散热、自然冷却 Auxiliary heat dissipation, Free cooling	自然冷却 Free cooling		风冷 Forced air cooling
通用功能 General functions	数字量输入 Digital input	2路DI 2-way DI	4路DI 4-way DI	5路DI 5-way DI	2路DI 2-way DI	4路DI 4-way DI
	数字量输入功能 Digital input function	120W: 两路DI一路DO，DI1使能，DI2反转，DO故障输出； 120W: Two DI and one DO, DI1 enabled, DI2 reversed, DO fault output; 400W: 正反转、正反转点动、多段速、自有停车、故障复位、电子刹车、外部故障输入、正反转限位； 400W: forward and reverse rotation, forward and reverse jog, multi speed, self parking, fault reset, electronic brake, external fault input, forward and reverse rotation limit;					
	模拟量输入 Analog input	/	外部模拟电压 (0～10V) External analog voltage		/	外部模拟电压 (0～10V) External analog voltage
	模拟量输入功能 Analog input function	/	模拟量速度控制 Analog speed control		/	模拟量速度控制 Analog speed control
	数字量输出 Digital output	1路DO 1-way DO	2路DO 2-way DO		1路DO 1-way DO	2路DO 2-way DO
	保护功能 Protection function	过流、过载、短路、过温、欠压、过压等 Overcurrent, overload, short circuit, overtemperature, undervoltage, overvoltage, etc				
	上位机 Upper computer	可使用485通讯连接电脑上位机软件，设置参数，抓取波形，程序升级 Can use 485 communication to connect to computer upper computer software, set parameters, capture waveforms, and upgrade programs				
	蓝牙 Bluetooth	无 No				
总线控制 Bus control	Modbus/RS485	无 No	最大支持115.2K波特率，可使用Modbus RTU协议与控制器通讯 Supports a maximum baud rate of 115.2K and can communicate with the controller using the Modbus RTU protocol	无 No	最大支持115.2K波特率，可使用Modbus RTU协议与控制器通讯 Supports a maximum baud rate of 115.2K and can communicate with the controller using the Modbus RTU protocol	
	CANopen	无 No				
使用环境 Usage environment	工作温度 Working temperature	-25～40℃；40度以上降额使用 Derating usage above 40 degrees Celsius				
	存储温度 Storage temperature	-10℃～70℃				
	湿度 Humidity	90%RH以下，不结露 Below 90% RH, without condensation				
	防护等级 Protection level	IP20				
	安装方式 Installation method	垂直或水平安装 Vertical or horizontal installation				
	海拔 Height	1000米以下，工作海拔在1000米以上时，每上升100米，需降额1.5%使用，最高工作海拔4000米 When the working altitude is above 1000 meters and below 1000 meters, a derating of 1.5% is required for every 100 meters increase. The maximum working altitude is 4000 meters				
	气压 Pressure	86kpa～106kpa				

● **注1**: 未加辅助散热可到12Arms
Note 1: Without auxiliary heat dissipation, it can reach 12Arms

C41系列无感驱动器
C41 SERIES NON-INDUCTIVE DRIVER

Z	DRV	•	C41	—	200	L	—	R	—	A
①	②		③		④	⑤		⑥		⑦

①	公司名称缩写 Company name abbreviation	Z: 中大力德 ZHONGDA LEADER	
②	产品类型 Product type	DRV: 驱动器及相关产品 Drivers and related products	
③	产品系列 Product series	C41: 无感驱动器系列 Non-inductive driver series	
④	功率等级 Power level	低压 Low pressure: 120:120W 200:200W 400:400W	
		高压 High pressure: 120:120W 200:200W 400:400W	
⑤	电源类型 Power supply type	S2: 单相 Single-phase AC220V/50Hz～60Hz	L: DC24V～DC48V
⑥	功能码 Function code	D: 带数字显示 With digital display	
		B: 带制动/刹车功能 With braking function	
		R: 带485通讯功能 With 485 communication function	
⑦	外观结构 Appearance structure	A: 面板式 Panel type	
		B: 内置式 Built-in type	

C41系列无感驱动器特点
Features of C41 series non-inductive drivers

- 只需三根电机动力线：从根本上避免电机编码器线或霍尔信号线的连接不可靠、信号被干扰等问题，可有效提升系统的可靠性。
  Only three motor power lines are needed: Fundamentally avoiding problems such as unreliable connection of motor encoder lines or Hall signal lines and signal interference, which can effectively improve the reliability of the system.
- 无需电机编码器或霍尔传感器：采用高性能无位置传感器方案，实现电机的正弦波FOC矢量控制，节省了编码器或霍尔的线束和端子，有效降低系统的整体成本。
  No need for motor encoder or Hall sensor: Adopting a high-performance position sensorless solution, achieving sine wave FOC vector control of the motor, saving the wiring harness and terminals of the encoder or Hall, effectively reducing the overall cost of the system.
- 低速性能好：优秀的速度闭环控制性能，最低转速可达50rpm，调速比可以与带编码器电机驱动器相媲美。
  Good low-speed performance: Excellent speed closed-loop control performance, with a minimum speed of up to 50rpm, and a speed ratio comparable to motor drives with encoders.
- 支持大负载带载启动：最大允许150%电机额定负载转矩条件下带载启动；如需更大负载转矩条件下带载启动，可与我司沟通产品定制事宜。
  Support heavy load on-load starting: Maximum allowable on-load starting at 150% of the rated load torque of the motor; If you need to start with load under higher load torque conditions, you can communicate with our company about product customization matters.
- 支持超长距离电机控制：本产品与电机间三相动力线的最长允许距离为20米如需支持更长距离，可与我司沟通产品定制事宜。
  Support for ultra long distance motor control: The maximum allowable distance for the three-phase power line between this product and the motor is 20 meters. If you need to support a longer distance, you can communicate with our company about product customization matters.
- 速度波动小：额定转速条件下速度波动大约为1%优异的稳速性能可以媲美带编码器电机，满足绝大部分应用的需求。
  Low speed fluctuation: Under rated speed conditions, the speed fluctuation is about 1%, and the excellent speed stability performance can be comparable to motors with encoders, meeting the needs of the vast majority of applications.
- 可支持超高速电机：支持电机最高转速可达30000rpm，如需支持更高电机转速，可与我司沟通定制。
  Can support ultra high speed motors: Supports a maximum motor speed of up to 30000 rpm. If you need to support higher motor speeds, you can communicate with our company for customization.
- 适用性强：拥有强大的电机参数自动识别功能:本产品与各个厂商各类无霍尔直流无刷电机、无编码器永磁同步电机均可适配。
  Strong applicability: With powerful automatic recognition function for motor parameters, this product can be compatible with various manufacturers of Hall free DC brushless motors and encoder free permanent magnet synchronous motors.
- 高性价比。
  High cost-effectiveness.

面板式 Panel type

ZDRV.C41-200L-R-A

ZDRV.C41-200S2-R-A

ZDRV.C41-400L-R-A

ZDRV.C41-400S2-R-A

内置式 Internal type

ZDRV.C41-200L-R-B

ZDRV.C41-200S2-R-B

ZDRV.C41-400L-R-B

ZDRV.C41-400S2-R-B

规格 Specifications

型号参数 Model parameters		C41系列无感驱动器 Series non-inductive driver							
		C41-200L-R-A	C41-200S2-R-A	C41-400L-R-A	C41-400S2-R-A	C41-200L-R-B	C41-200S2-R-B	C41-400L-R-B	C41-400L-R-B
额定输入电压 Rated input voltage		DC24V-DC48V	AC220V/50HZ	DC24V-DC48V	AC220V/50HZ	DC24V-DC48V	AC220V/50HZ	DC24V-DC48V	AC220V/50HZ
输出电流 Output current	额定电流 (rms) Rated current	7.5Arms	1.2Arms	15.0Arms	2.5Arms	7.5Arms	1.2Arms	15.0Arms	2.5Arms
	峰值电流 (peak) Peak current	22.5Ap	4.0Ap	45.0Ap	8.0Ap	22.5Ap	4.0Ap	45.0Ap	8.0Ap
能耗制动 Energy consumption braking		无 No							
过压报警电压 Overvoltage alarm voltage		125%额定电压过压 Rated voltage overvoltage							
欠压报警电压 Under voltage alarm voltage		70%额定电压过压 Rated voltage overvoltage							
过载时间 Overload time		150%额定电流1分钟，180%额定电流10秒，200%额定电流1秒 150% rated current for 1 minute, 180% rated current for 10 seconds, and 200% rated current for 1 second							
冷却方式 Cooling method		自然冷却、接触式散热 Free cooling, contact cooling							
通用功能 General functions	数字量输入 Digital input	3路 (支持NPN/PNP) 3-way (Supporting NPN/PNP)	4路 (支持NPN/PNP) 4-way (Supporting NPN/PNP)	4路，支持NPN/PNP，光耦输入，高电平DC12V～DC30V，低电平DC0V～DC5V，输入阻抗3KΩ 4-way, supporting NPN/PNP, optocoupler input, high-level DC12V～DC30V, low-level DC0V～DC5V, input impedance 3K Ω						
	数字量输入功能 Digital input function	正转运行、反转运行、三线制控制、正转点动、反转点动、自由停车、故障复位、电子刹车、外部故障输入、正转限位、反转限位、多端速选择等 Forward running, reverse running, three-wire control, forward jogging, reverse jogging, free parking, fault reset, electronic braking, external fault input, forward limit, reverse limit, multi terminal speed selection, etc								
	模拟量输入 Analog input	1路, DC0V～DC5V/10V, PWM (3KHZ～10KHZ)							
	模拟量输入功能 Analog input function	速度调节、转矩调节 Speed regulation, torque regulation							
	数字量输出 Digital output	1路，光耦输出，兼容支持NPN/PNP，最大工作电压60VDC，最大输出电流100mA 1 channel, optocoupler output, compatible with NPN/PNP support, maximum working voltage 60VDC, maximum output current 100mA							
	脉冲控制 Pulse control	无 No							
	保护功能 Protection function	欠压保护、过压保护、过载保护、硬件过流保护、软件过流保护、限流保护、过温保护 、缺相保护、堵转保护等 Undervoltage protection, overvoltage protection, overload protection, hardware overcurrent protection, software overcurrent protection, current limiting protection, over temperature protection, phase loss protection, locked rotor protection, etc								
	上位机 Upper computer	不支持 Not support		支持 Support					
	操作面板 Operation panel	可配置中大的手持操作面板，设置参数和读取数据 Configurable Zhongda handheld operation panel, setting parameters and reading data							
总线控制 Bus control	Modbus/RS485	无 No		最大支持115.2K波特率，可使用Modbus RTU协议与控制器通讯 Supports a maximum baud rate of 115.2K and can communicate with the controller using the Modbus RTU protocol					
	CANopen	无 No							
使用环境 Usage environment	工作温度 Working temperature	-20～40℃，40℃以上降额使用，每升高1℃，需降低2.5%之额定电流，工作温度最高可至50℃ -20～40℃, derated for use above 40℃. For every 1℃ increase, the rated current needs to be reduced by 2.5%. The maximum operating temperature can reach 50℃							
	存储温度 Storage temperature	-30 ℃～+60℃，空气温度变化小于1℃/分 -30 ℃～+60 ℃, with an air temperature change of less than 1℃/minute							
	湿度 Humidity	90%RH以下，不结露 Below 90% RH, without condensation							
	防护等级 Protection level	IP20							
	安装方式 Installation method	面板式安装 Panel mounted				内置式安装 Built-in installation			
	海拔 Height	1000米以下使用；1000米以上降额使用，每升高100米需降额1.5%使用；海拔2000米以上请测试确认 Used below 1000 meters; For use with a derating of over 1000 meters, a derating of 1.5% is required for each 100 meter increase; Please test and confirm if the altitude is above 2000 meters								
	气压 Pressure	86kpa～106kpa							

F10系列工业车辆驱动器
F10 SERIES INDUSTRIAL VEHICLE DRIVER

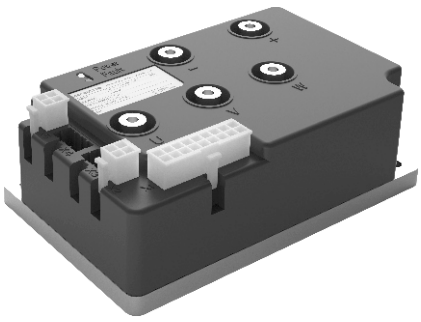
Z	DRV	•	F10	—	1K5	L	—	RC
①	②		③		④	⑤		⑥

①	公司名称缩写 Company name abbreviation	Z: 中大力德 ZHONGDA LEADER		
②	产品类型 Product type	DRV: 驱动器及相关产品 Drivers and related products		
③	产品系列 Product series	F10: 无刷叉车驱动器系列 Brushless forklift driver series		
④	功率等级 Power level	750	1500	2000
		750W	1500W	2000W
⑤	电源类型 Power supply type	S1: 单相 Single-phase AC110V/50Hz~60Hz	L: DC24V~DC48V	
		S2: 单相 Single-phase AC220V/50Hz~60Hz	L2: DC24V	
		T2: 三相 Three-phase AC220V/50Hz~60Hz	L3: DC36V	
		T3: 三相 Three-phase AC380V/50Hz~60Hz	L4: DC48V	
⑥	功能码 Function code	D: 带数字显示 With digital display		
		B: 带制动/刹车功能 With braking function		
		C: 带CanOpen通讯功能 With CanOpen communication function		
		R: 带485通讯功能 With 485 communication function		
		P: 带脉冲输入控制 With pulse input control		
		F: 带脉冲分频输出 With pulse frequency division output		

F10系列工业车辆驱动器特点
F10 series industrial vehicle driver features

- 具有蓝牙功能，节省采购参数手柄。
  Equipped with Bluetooth function, saving procurement parameters and handles.
- 上位机软件辅助调试：借助免费PC上位机软件可实现参数修改、故障查询、状态监控，软件示波器显示波形等功能，让调试更简单。
  Upper computer software assisted debugging: With the help of free PC upper computer software, functions such as parameter modification, fault query, status monitoring, and software oscilloscope display of waveforms can be achieved, making debugging easier.
- 参数设置、使用习惯符合主流习惯。Parameter settings and usage habits are in line with mainstream habits.
- 与行业内主流产品完美兼容：电气接口、安装孔位与行业内主流产品完美兼容，使用原有线束，直接无缝替换，方便客户使用。
  Perfect compatibility with mainstream products in the industry: Electrical interfaces and installation holes are perfectly compatible with mainstream products in the industry. The original wiring harness is used for seamless replacement, making it convenient for customers to use.
- 支持两种控制模式：同时支持手柄模拟量输入和CAN通信输入两种控制方式。
  Support two control modes: Simultaneously supporting handle analog input and CAN communication input.
- 安全可靠、皮实耐用：完备、全面的保护功能，包括过流、过载、过压、欠压堵转、断线等保护功能，为产品保驾护航。
  Safe, reliable, and durable: Complete and comprehensive protection functions, including overcurrent, overload, overvoltage, undervoltage, rotor blocking, wire breakage, and other protection functions, provide protection for the product.

ZDRV.F10-1K5L-CR



ZDRV.F10-2K0L-CR

规格 Specifications

型号参数 Model parameters		F10系列工业车辆驱动器 Series industrial vehicle driver	
		ZDRV.F10-1K5L-CR	ZDRV.F10-2K0L-CR
额定输入电压 Rated input voltage		24VDC～48VDC	
输出电流 Output current	额定电流 (rms) Rated current	35Arms	50Arms
	峰值电流 (peak) Peak current	90Ap	200Ap
编码器 Coder		增量式（单端）Incremental (Single ended)	
霍尔 Hall		UVW	
过压报警电压 Overvoltage alarm voltage		DC65V±1V	
欠压报警电压 Under voltage alarm voltage		DC18V±1V	
过载时间 Overload time		90A (10s)	200A (1min)
冷却方式 Cooling method		自然冷却（满功率运行，需辅助散热） Free cooling (Full power operation, auxiliary heat dissipation required)	
通用功能 General functions	数字量输入 Digital input	9路，高电平12V～48VDC，低电平0～5VDC 9-way, high-level 12V～48VDC, low-level 0～5VDC	
	数字量输入功能 Digital input function	前进，后退，抬升，下降，龟速，互锁开关，紧急反向等 Forward, backward, lift, descend, turtle speed, interlock switch, emergency reverse, etc	
	模拟量输入 Analog input	1路 (0-5V) 1-way (0-5V)	
	模拟量输入功能 Analog input function	运行速度 Running speed	
	数字量输出 Digital output	3路 (48V，最大1A电流) 3-way (48V, maximum 1A current)	
	保护功能 Protection function	欠压保护、过压保护、过载保护、软件过流保护、过温保护、硬件过流保护、堵转保护等 Undervoltage protection, overvoltage protection, overload protection, software overcurrent protection, over temperature protection, hardware overcurrent protection, locked rotor protection, etc	
	上位机 Upper computer	可使用485通讯连接电脑上位机软件，设置参数，抓取波形，程序升级 Can use 485 communication to connect to computer upper computer software, set parameters, capture waveforms, and upgrade programs	
	蓝牙 Bluetooth	通过手机蓝牙连接驱动器修改参数 Modifying parameters by connecting to the driver through Bluetooth on a mobile phone	
总线控制 Bus control	Modbus/RS485	最大支持115.2K波特率，可使用Modbus RTU协议与控制器通讯 Supports a maximum baud rate of 115.2K and can communicate with the controller using the Modbus RTU protocol	
	CANopen	最大支持1M波特率，可使用CANopen协议与控制器通讯 Supports a maximum baud rate of 1M and can communicate with the controller using the CANopen protocol	
使用环境 Usage environment	工作温度 Working temperature	-25～50℃；50度以上降额使用 Derating usage above 50 degrees Celsius	
	存储温度 Storage temperature	-45℃～60℃	
	湿度 Humidity	90%EH以下 Below 90% EH	
	防护等级 Protection level	IP54	
	安装方式 Installation method	垂直或水平安装 Vertical or horizontal installation	
	海拔 Height	1000米以下，工作海拔在1000米以上时，每上升100米，需降额1.5%使用，最高工作海拔4000米 When the working altitude is above 1000 meters and below 1000 meters, a derating of 1.5% is required for every 100 meters increase. The maximum working altitude is 4000 meters	
	气压 Pressure	86kpa～106kpa	

F20系列工业车辆驱动器
F20 SERIES INDUSTRIAL VEHICLE DRIVER

Z ① DRV ② • F20 ③ — 020 ④ L2 ⑤ — RC ⑥

①	公司名称缩写 Company name abbreviation	Z: 中大力德 ZHONGDA LEADER		
②	产品类型 Product type	DRV: 驱动器及相关产品 Drivers and related products		
③	产品系列 Product series	F20: 有刷叉车驱动器系列 Rated current brush forklift driver series		
④	额定电流 Rated current	020	030	050
		20A	30A	50A
⑤	电源类型 Power supply type	S1: 单相 Single-phase AC110V/50Hz～60Hz	L: DC24V～DC48V	
		S2: 单相 Single-phase AC220V/50Hz～60Hz	L2: DC24V	
		T2: 三相 Three-phase AC220V/50Hz～60Hz	L3: DC36V	
		T3: 三相 Three-phase AC380V/50Hz～60Hz	L4: DC48V	
⑥	功能码 Function code	D: 带数字显示 With digital display		
		B: 带制动/刹车功能 With braking function		
		C: CAN总线控制手柄 CAN bus control handle		
		R: 带485通讯功能 With 485 communication function		
		P: 模拟量控制手柄 Analog control handle		
		F: 带脉冲分频输出 With pulse frequency division output		

F20系列工业车辆驱动器特点 F20 series industrial vehicle driver features

- 上位机软件辅助调试：借助免费PC上位机软件可实现参数修改、故障查询、状态监控，软件示波器显示波形等功能，让调试更简单。
  Upper computer software assisted debugging: With the help of free PC upper computer software, functions such as parameter modification, fault query, status monitoring, and software oscilloscope display of waveforms can be achieved, making debugging easier.
- 参数设置、使用习惯符合主流习惯。Parameter settings and usage habits are in line with mainstream habits.
- 与行业内主流产品完美兼容：电气接口、安装孔位与行业内主流产品完美兼容，使用原有线束，直接无缝替换，方便客户使用。
  Perfect compatibility with mainstream products in the industry: Electrical interfaces and installation holes are perfectly compatible with mainstream products in the industry. The original wiring harness is used for seamless replacement, making it convenient for customers to use.
- 支持两种控制模式：同时支持手柄模拟量输入和CAN通信输入两种控制方式。
  Support two control modes: Simultaneously supporting handle analog input and CAN communication input.
- 安全可靠、皮实耐用：完备、全面的保护功能，包括过流、过载、过压、欠压堵转、断线等保护功能，为产品保驾护航。
  Safe, reliable, and durable: Complete and comprehensive protection functions, including overcurrent, overload, overvoltage, undervoltage, rotor blocking, wire breakage, and other protection functions, provide protection for the product.
- 好用不贵、性价比高：产品品质好，性能优异，价格实惠，物超所值，值得信赖。
  Easy to use but not expensive, with high cost-effectiveness: The product has good quality, excellent performance, affordable price, value for money, and is trustworthy.

ZDRV.F20-020L2-RP

ZDRV.F20-020L2-RC

ZDRV.F20-030L2-RP

ZDRV.F20-030L2-RC

ZDRV.F20-050L2-RP

ZDRV.F20-050L2-RC

规格 Specifications

型号参数 Model parameters		F20系列工业车辆驱动器 Series industrial vehicle driver					
		F20-020L2-RP	F20-030L2-RP	F20-050L2-RP	F20-020L2-RC	F20-030L2-RC	F20-050L2-RC
额定输入电压 Rated input voltage		DC24V-DC48V					
输出电流 Output current	额定电流 (rms) Rated current	20Arms	30Arms	50Arms	20Arms	30Arms	50Arms
	峰值电流 (peak) Peak current	90Ap	100Ap	125Ap	90Ap	100Ap	125Ap
过压报警电压 Overvoltage alarm voltage		28.8V					
欠压报警电压 Under voltage alarm voltage		19.2V					
过载时间 Overload time		90A(10S)	100A(10S)	125A(10S)	90A(10S)	100A(10S)	125A(10S)
冷却方式 Cooling method		辅助散热 Auxiliary heat dissipation					
通用功能 General functions	数字量输入 Digital input	5路 Way			6路 Way		
		高电平10V～30Vdc，低电平0～5Vdc，输入阻抗47kΩ High level 10V～30Vdc, low level 0～5Vdc, input impedance 47kΩ					
	数字量输入功能 Digital input function	根据需求，可定义为：龟速开关输入、互锁开关输入、倒车开关输入、紧急反向常开开关输入、充电禁止（低电平有效） According to requirements, it can be defined as: turtle speed switch input, interlock switch input, reverse switch input, emergency reverse normally open switch input, charging inhibit (Effective at low level)			根据需求，可定义为：龟速开关输入、互锁开关输入、倒车开关输入、紧急反向常开开关输入、前进开关输入、充电禁止（低电平有效） According to requirements, it can be defined as: turtle speed switch input, interlock switch input, reverse switch input, emergency reverse normally open switch input, forward switch input, charging inhibit (Effective at low level)		
	模拟量输入 Analog input	3路，0Vdc～+5Vdc					
	模拟量输入功能 Analog input function	加速器输入、加速器低端、限速器/抬升锁定信号输入 Accelerator input, accelerator low end, speed limiter/lift lock signal input			加速器输入、加速器低端、限速器信号输入 Accelerator input, accelerator low end, speed limiter signal input		
	数字量输出 Digital output	3路，最大工作电压28Vdc，最大电流0.5A 3-way, maximum working voltage 28Vdc, maximum current 0.5A			4路，最大工作电压28Vdc，最大电流0.5A 4-way, maximum working voltage 28Vdc, maximum current 0.5A		
	脉冲控制 Pulse control	无 No					
	保护功能 Protection function	欠压保护、过压保护、过载保护、硬件过流保护、软件过流保护、限流保护、过温保护 、缺相保护、堵转保护等 Undervoltage protection, overvoltage protection, overload protection, hardware overcurrent protection, software overcurrent protection, current limiting protection, over temperature protection, phase loss protection, locked rotor protection, etc					
	上位机 Upper computer	可使用485通讯连接电脑上位机软件，设置参数，抓取波形，程序升级 Can use 485 communication to connect to computer upper computer software, set parameters, capture waveforms, and upgrade programs					
	操作面板 Operation panel	无 No					
总线控制 Bus control	Modbus/RS485	最大支持115.2K波特率，可使用Modbus RTU协议与控制器通讯 Supports a maximum baud rate of 115.2K and can communicate with the controller using the Modbus RTU protocol					
	CANopen	不支持 Not support			支持 Support		
使用环境 Usage environment	工作温度 Working temperature	-25～40℃；40度以上降额使用 Derating usage above 40 degrees Celsius					
	存储温度 Storage temperature	-10℃～70℃					
	湿度 Humidity	90%RH以下，不结露 Below 90% RH, without condensation					
	防护等级 Protection level	IP54					
	安装方式 Installation method	垂直或水平安装 Vertical or horizontal installation					
	海拔 Height	1000米以下，工作海拔在1000米以上时，每上升100米，需降额1.5%使用，最高工作海拔4000米 When the working altitude is above 1000 meters and below 1000 meters, a derating of 1.5% is required for every 100 meters increase. The maximum working altitude is 4000 meters					
	气压 Pressure	86kpa～106kpa					

交流调速器
AC SPEED CONTROLLER

A21	040	S1/S2	D/B
①	②	③	④

①	类型 Type	A21: 力矩面板式（外置电容） Torque panel type (External capacitor)	A22: 数显内置式（外置电容） Display internal type (External capacitor)	A23: 数显带刹车式 Display brake type	A24: 数显内置式（带刹车） Display internal type (With brake)
②	功率 Power	040	200	200	200
		≤40W	≤200W	≤200W	≤200W
③	电压 Voltage	S1		S2	
		AC110V (50HZ / 60HZ)		AC220V (50HZ / 60HZ)	
④	功能 Feature	D: 数显式 With display			
		B: 带制动/刹车 With brake			

A21-040S2-D

A22-200S2-DB

A23-200S2-DB

A24-200S2-DB

A21系列面板式力矩驱动器特点
Features of A21 series plate torque driver

- 采用MCU数字控制技术，功能丰富，性能优异。
- 采用数显菜单式选项，修改设定方便快捷。
- 可实现缓慢加大力矩、缓慢减小力矩。
- 可面板操作、外接开关控制。
- 面板旋钮自动匹配最大力矩，力矩控制方便、安全。
- 自动识别输入电源频率。
- 附电机散热风扇电源接口，方便接线。

- Using MCU digital control technology, it has rich functions and excellent performance.
- Using digital display menu options, it is convenient and quick to modify settings.
- It can gradually increase the torque and slowly decrease the torque.
- Panel operation, external switch control.
- The panel knob automatically matches the maximum torque, and the torque control is convenient and safe.
- Automatic identification of input power frequency.
- With motor cooling fan power interface for easy wiring.

A22系列内置式数显调速器特点
Features of A22 series built - in digital display governor

- 采用MCU数字控制技术，功能丰富，性能优异。
- 采用数显菜单式选项，修改设定方便快捷。
- 可根据用户显示需要设定显示倍率，自动换算显示目标值。
- 可实现缓慢加速、缓慢减速、快速停止、3段速等。
- 可外接开关控制、0-5V模拟量控制。
- 模拟量控制可自动匹配最高转速，调速控制方便、安全。
- 自动识别输入电源频率。
- 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)

- Using MCU digital control technology, it has rich functions and excellent performance.
- Using digital display menu options, it is convenient and quick to modify settings.
- The display magnification can be set according to the user's display needs, and the display target value can be automatically converted.
- It can realize slow acceleration, slow deceleration, quick stop, 3-stage speed, etc.
- External switch control, 0-5V analog control.
- Analog control can automatically match the maximum speed, and the speed control is convenient and safe.
- Automatic identification of input power frequency.
- Lock-rotor function protection to prevent motor and governor from burning out due to locked-rotor.

(This function can protect the stall overload, but cannot protect the non-stall overload)

A23系列带刹车数显调速器特点
Features of A23 series with brake digital display governor

- 采用MCU数字控制技术，功能丰富，性能优异。
- 采用数显菜单式选项，修改设定方便快捷。
- 可根据用户显示需要设定显示倍率，自动换算显示目标值。
- 可实现缓慢加速、缓慢减速、失电电磁制动。
- 可面板操作、外接开关控制。
- 面板旋钮自动匹配最高转速，调速控制方便、安全。
- 内置运行电容。
- 自动识别输入电源频率。
- 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)

- Using MCU digital control technology, it has rich functions and excellent performance.
- Using digital display menu options, it is convenient and quick to modify settings.
- The display magnification can be set according to the user's display needs, and the display target value can be automatically converted.
- It can realize slow acceleration, slow deceleration and power-off electromagnetic braking.
- Panel operation, external switch control.
- The panel knob automatically matches the maximum speed, and the speed control is convenient and safe.
- Built-in running capacitor.
- Automatic identification of input power frequency.
- Lock-rotor function protection to prevent motor and governor from burning out due to locked-rotor.
(This function can protect the stall overload, but cannot protect the non-stall overload)

US	5	120	A/C
①	②	③	④

①	类型 Type	US: 通用型 Universal type; ZF: 数显面板式 Digital display							
②	机座号 Size	2		3		4		5	6
		60*60mm		70*70mm		80*80mm		90*90mm	104*104mm
③	功率 Power	6	15	25	40	60	90	120	140	200
		6W	15W	25W	40W	60W	90W	120W	140W	200W
④	电压 Voltage	A				C				
		AC110V (50Hz / 60Hz)				AC220V (50Hz / 60Hz)				

US系列调速器特点 Features of US series speed controller

- 具有正反转切换、调速功能。
- 采用SMD技术设计，高可靠性。
- 安装简单、接线简单，使用方便。
- 内置运行电容。
- 与调速电机组合实现宽范围的无级变速。

- It has the functions of forward and reverse switching and speed regulation.
- Designed with SMD technology, high reliability.
- Simple installation, simple wiring, and easy to use.
- Built-in running capacitor.
- Combined with the speed regulating motor to realize a wide range of stepless speed change.

ZF系列调速器特点 Features of ZF series speed controller

- 采用MCU数字控制技术，功能丰富，性能优异。
- 采用数显菜单式选项，修改设定方便快捷。
- 可根据用户显示需要设定显示倍率，自动换算显示目标值。
- 可实现缓慢加速、缓慢减速。
- 可面板操作、外接开关控制。
- 面板旋钮自动匹配最高转速，调速控制方便、安全。
- 内置运行电容。
- 自动识别输入电源频率。
- 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)

- Using MCU digital control technology, rich functions and excellent performance.
- Using digital display menu options, it is convenient and quick to modify settings.
- The display magnification can be set according to the user's display needs, and the display target value can be automatically converted.
- It can realize slow acceleration and slow deceleration.
- Panel operation, external switch control.
- The panel knob automatically matches the maximum speed, and the speed control is convenient and safe.
- Built-in running capacitor.
- Automatic identification of input power frequency.
- Stall-rotor protection function to prevent motor and controller from being burned out due to blocked-rotor (This function can protect blocked-rotor overload, but cannot protect non-blocked-rotor overload)

US系列产品示意图

ZF系列产品示意图

驱动器技术支持微信二维码

中大力德公众号二维码

CATALOGUE

小型交流齿轮减速电机
SMALL AC GEAR MOTOR

中大力德

微型永磁无刷齿轮减速电机
DC BRUSHLESS GEAR MOTOR

中大力德

传动行星减速电机
TRANSMISSION PLANETARY

中大力德

ZB/ZBR/ZE/ZER/HD/HDR系列
高精度行星减速机
PLANETARY GEAR BOX

中大力德

ZDR系列高精度减速机
PLANETARY GEAR BOX

中大力德

ZDE/ZDF/ZDWE/ZDWF/ZDS系列
高精度行星减速机
PLANETARY GEAR BOX

中大力德

中大力德

SERVO DRIVER / BRUSHLESS DRIVER
INDUSTRIAL VEHICLE DRIVER
AC SPEED CONTROLLER

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