

## Instructions for using S3 driver upper computer

### 1. hardware configuration

The upper computer software of S3 driver adopts CAN communication method, with two communication lines connected to the upper computer through USBCAN tool. To use the upper computer, ZLGCAN driver needs to be installed in advance.

## 2. Upper computer interface and instructions

#### Before connecting the motor:

			S3 DEBUG	GING SOFTWARE	E • • • •		— x
				MYACTUATOR			
Basic paramete	ers 🗸 Advanced parame	ters / lotor runnin	g				
Lotor ID		Iodify I	D	Ca	nnect	Disconnect	
	lst	Encoder			2nd E	ncoder	
	ncoder calibratic	Calibrated			ncoder calibratic	Calibrated	
	Set zero point				Set zero point		
Motor info	rmatio	PID parameter	adjustment	Course I and			
Lotor numbe	er	P	rosition loop	Speeu 100p	2 axis curre		PITT
Totor name							
FT version		D					
Factory tim		R (slope)					
Reduction 1	rat	T (filter)					
Save	Read		l	Read PID values	Save PID valu	25	
lotor status:	Not connected	Frame ID(HI	ex)	Data(HEX):			

## After successfully connecting the motor

#### **Basic parameter page**



		S3 DEBUGGIN			-			
Basic parameters Advanced parameters Inter running								
Inter ID 2 B Indify ID Connected C Disconnected								
lst	Encoder	D		2nd Enco	oder			
ncoder calibratic	Calibrated		10	oder calibratic	Calibrated			
Set zero point	384.0		2	Set zero point				
Motor information F	PID parameter	adjustment	<u> </u>					
Lotor number 1		Position loop	Speed loop	2-axis current	)-axis current			
	Р	250.0000	1000. 0000	1.0000	1.0000			
Notor name CEN30		250.0000						
FW version 20231023	D	125,0000	0, 0000	0, 0000	0, 0000			
Factory time 20231214	R (simpe)	0.0000	0. 0000	10.0000	11,0000			
Reduction rat: 200	T (filter)	0.0020	0.0020	0,0020	0,0020			
	(iiiter)	0.0020	0:0020	0.0020	0.0020			
Save Read		Read	PID values	Save PID values				
otor status: H Connected	Frame ID(H	EX) Dat	a (HEX) :	J	,			

## Advanced parameter page

		• S3 DEBUG	GING SOFTWARE	• • • •	— x
			MYACTUATOR		
Basic parameters $$	Advanced parameters $$	Lotor running			
Limit parameters					
Speed limit (RPE)	20.0				
Voltage limit (V)	24.0				
Current limit (A)	10. 0				
Save	Read				
	K				
Lotor status:	Connected	Frame ID(HEX)	Data(HEX):		

## **Motor Running Page**



asic parameters \/ Advance	ed parameters 🗸 Loto	r running \				
Run	Real-tir	me status curve			Status Display	
Operating mode Posit	ion 🔻		位置		<b>B</b> (* ) .	204 (
	600				rosition():	384.0
Position(°):	400				Speed(RP∎):	0.0
Speed (RPI) :	0				Q-axis voltage(%	-0.0
Current (A) :				20	Q-axis current(#	0.1
lternating motio			速度		D-axis voltage(%	0.0
arget pos 1(°):	4				D-axis current(1	0.0
un speed 1(RPM):					Notor temp. (°C) :	19.9
un time 1(ms):			М			
arget pos 2(°):				20		
un speed 2(RPH):			电流		N N	
un time 2(ms):	6 4 2					
Start motor Stop	motor					

Mainly including:

- A. Page switching
  - Basic parameter page
  - Advanced parameter page
  - Motor running page
- B. Obtain motor ID and modify motor ID
- C. Connection and disconnection of motors
- D. First encoder calibration and zero point setting
- E. Second encoder calibration (not yet open)
- F. Motor information display
- G. Acquiring and modifying PID parameters of motors
- H. Motor status display
- I. not have
- J. CAN command prompt

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- K. restricted parameters
- L. Motor operation module
- M. Real time curve module
- N. Status Display

#### 3. Motor connection



Before connecting the motor, please ensure that the ZLGCAN driver program is installed on the computer, the motor is connected to the power supply and USBCAN module, and click the connection button. If the motor ID, PID, and other information can be obtained, it indicates that the motor is connected normally, and the upper computer can be used to operate the motor; If there is no response from the motor connection, it indicates that the motor is not connected. The reason is that the motor is not powered, USBCAN is not connected properly, and CAN communication is faulty. If all connections are normal and the upper computer cannot be used properly, please contact technical support personnel.



Click the disconnect button to disconnect the motor.

#### 4. Basic parameter settings

#### 4.1. Modify motor ID





The default ID of the motor at the factory is 1

Motor modifiable ID range: 1-30

Enter the ID that needs to be set, modify the motor ID, successfully modify the motor ID, and it will take effect immediately

### 4.2. 4.2. Encoder calibration (first encoder)





Click to set the zero point, the current position will become zero, and it will take effect immediately

#### 4.4. Reading and Saving PID Values



PID parameter	r adjustment			
	Position loop	Speed loop	2-axis current	)-axis current
Р	250.0000	1000. 0000	1.0000	1.0000
Ι	250.0000	0.0100	1. 0000	1,0000
D	125.0000	0.0000	0. 0000	0. 0000
R (slope)	0.0000	0.0000	10.0000	11.0000
T (filter)	0. 0020	0.0020	0.0020	0. 0020
	Read	PID values	Save PID values	

Click to read the PID value to obtain the data shown in the above figure.

The motor saves PID values and can set the PID parameters of the motor; Only the D parameter of the position loop can be adjusted (to adjust the overshoot phenomenon of the motor)

## 5. Motor operation demonstration

#### 5.1. Position mode

		• S3 DEB	UGGING SOFT	WARE ••••			— x
			Perfection Bodelin Descenter				
Basic parameters \/	Advanced paramet	ers V Motor running \					
Run		Real-time status curve				Status Display	
Operating mode	Position -		位置				
		600 1				Position('):	384.0
Position(*):	1000	400				Speed(RPL):	0.0
Speed(RP <b>I</b> ):						Q-axis voltage(1	-0.1
Current(A):		-30	-20	-10	0	Q-axis current(#	0.0
Alternating motio	i ( <b>_</b> )		速度			D-axis voltage(V	-0.0
Target pos 1(°):						D-axis current(#	-0.0
Run speed 1(RPE):						Notor temp. (°C) :	19.8
Run time 1(ms):							
Target pos 2(°):			-20		0		
Run speed 2(RPE) :			电流				
Run time 2(ms):					W/W/O		
	2				0110		
Start motor	Stop motor		-20				
Lotor status:	Connected	Frame ID(HEX)	Data(HEX):				

In position mode, the position and speed values need to be given. Click to start the motor, and

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the motor will run to the given position according to the given speed; The position and running speed can be observed through status display and real-time status curve. Speed value range: refer to the appendix

# 5.2. Speed mode

		• • \$3 DE		TWARE •····	5		— x
			Perfecture Publice Transvessor				
/ Basic parameters \/	Advanced paramet	ers / Motor running \					
r Kun						Status Display	
Operating mode	Speed -		位置			/0>	
		410 1				Position(~):	384.0
Position(°):		390				Speed(RPE):	-0.0
Cl(NDW) -		380				0	
Speed(Krm):	3	370				Q-axis Voltage()	-0.0
Current(A):		10			40	Q-axis current(#	-0.3
Alternating motio			速度			D-axis voltage(V	0.0
Target pos 1(°):						D-axis current(#	0.0
Run speed 1(RPM):						Notor temp. (°C) :	19.8
Run time 1(ms):							
Target pos 2(°):		10	20	30	40		
Run speed 2(RPE) :			电流				
Run time 2(ms):							
	/ 2	0 -2	·····	n an			
		4					
Start motor	Stop motor		20	30	40		
lotor status:	Connected	Frame ID(HEX)	Data(HEX):				

In speed mode, given the speed of the motor, the motor will continue to operate at the given

speed.

#### 5.3. Current mode



		•••• S3 E		WARE •····		— x
∕Basic parameters √	Advanced paramet	ers V Lotor running \				
Run		Real-time status curv	e		Status Display	
Operating mode	Current -	410	位置		Position(°):	384.0
Position(°):		400			Speed(RPT):	-0.0
Speed(RPE) :		370			Q-axis voltage(%	-0.0
Current(A):		360	40 50	60	Q-axis current(1	-0.2
Alternating motio	1_1		速度		D-axis voltage(V	-0.0
Target pos 1(°):					D-axis current(/	-0.0
Run speed 1(RPE):					Notor temp. (°C) :	19.7
Run time 1(ms):						
Target pos 2(°):		30	40 50	60		
Run speed 2(RPM) :			电流			
Run time 2(ms):	12	2 0		and and a strength of the second second		
Start motor	Stop motor		40 50	60		
Lotor status: (	Connected	Frame ID(HEX)	Data(HEX):			

In current mode, the motor operates according to the given current value.

## 5.4. Reciprocating motion mode

				Partecar Parlance Press				
asic parameters \/ # P	dvanced parame	ters \/ Loto	or running \				-	
Kun		Keal-ti	me status curve				Status Display	
Operating mode	Current •				18		Pagition(°):	204 0
		410					TOSICIÓN( ).	304.0
Position(°):							Speed(RPE):	-0.0
Speed(RP <b>I</b> ):		380					Q-axis voltage(%	0.0
Current(A):				80			Q-axis current(1	-0.0
lternating motio							D-axis voltage(%	-0.0
<pre>farget pos 1(°):</pre>	1000						D-axis current(1	0.0
tun speed 1(RPE):	10	0	→ 2				Notor temp. (°C):	19.8
un time 1(ms):	5000							
arget pos 2(°):				80	90	100		
tun speed 2(RPE) :	10			电				
Run time 2(ms):	5000	4						
		0 -2	duran madam	·····				
Stant motor	Ston motor	3 -4						
Start motor	Stop motor							

In reciprocating motion mode, it is necessary to select the reciprocating motion switch and provide target position 1, running speed 1, and running time 1; Target position 2, running speed 2,



running time 2, click the start motor button, and the motor will move back and forth according to the given value.

## **1.1. Version Revision Information**

V1.0. 2023-12-24





# Appendix

Motor model	Speed value range
CEM30	0~15RPM
RMD-H-90	30~300RPM