KELLY APP USER MANUAL

IN ACCORDANCE WITH

E-TECH ELECTRIC DRIVE SYSTEMS

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1. Connecting to the Kelly App

Please download Kell app _(**this app is suitable for android devices only**)_**:**

https://shopetechdrives.com/wp-content/uploads/2023/11/E-Tech-Controller-App.zip

Please install the app. Connect your device directly to controller using Bluetooth (in settings on your device turn on Bluetooth and show available devices, controller Bluetooth will be made of numbers) after establishing connection to the controller you can use previously installed app to change controller parameters.

Open the Kelly app and use the bottom button "connect" to connect the app to the controller, Then please use the bottom right button "read" to read current settings

⚠️	**WARNING !** **Changing controller parameters without E-Tech consultation may cause damage to the E-Tech system and result in warranty being void.**
⚠️	**WARNING !** **Do not operate the motor while changing any parameters in controller settings. Especially do NOT move the throttle while changing parameters.**

2. Phasing procedure

Navigate to AC Calibration, page in app.

Find "Motor Identify En" with value of 85 please change this value to 170 using keyboard on your device then touch "write" button on the bottom to save this settings.

Turn OFF controller using an ignition key, after 10 seconds turn it ON again. Motor will start turning slowly 6-7 times. This procedure take 2-3 minutes.

Successful phasing procedure:

- If phasing procedure was successful controller will inform you by sound (beep) signal to confirm that procedure was successful.
- In Kelly app "Motor identify En" value of 170 should automatically return to 85 value.
- "Internal reset error" message should appear on the E-Tech display and/or in Kelly app.

If procedure was successful, turn OFF controller using a key, turn it ON again to check if problem is solved, if not follow "**NOT successful phasing procedure**".

NOT successful phasing procedure signs:

- After 3 minutes there is no sound confirmation.
- In Kelly app "Motor identify En" value remains 170.
- "Internal reset error" message NOT appeared on the E-Tech display nor in Kelly app.

If there is at least 2 of this sings procedure was not finished correctly and motor will not work.

NOT successful phasing procedure:

Check if there is no restring on the shaft. During phasing procedure motor operates with very low power because of that any additional difficulties like propeller can cause motor not to finish the procedure correctly.

Change shaft position before attempting another phasing procedure. Time to time motor will stuck in position where magnets are restraining the motor in correctly starting the procedure. Changing shaft position manually can help motor start correctly.

Changing phases manually by changing motor cables position. User can change phasing cables "U" "V" "W" connected to corresponding controller "U" "V" "W" sockets. This cables are established after making initial successful phasing procedure therefore user can re-establish cables for corresponding "U" "V" "W" controller sockets, by switching position of two cables together and then performing phasing procedure, if procedure will be successful form that point forward this switched cables should be marked correspondingly to the "U" "V" "W" controller sockets.

Example. User can change connecting places for U and V cables connecting U cable to V socket and V cable to U socket. If the phasing procedure will work with this switched cables position U and V labels on the cables should be erased and marked correctly.

Controller sockets	Cables 1	Cables 2	Cables 3	Cables 4	Cables 5	Cables 6
U	U	U	W	W	V	V
W	W	V	V	U	W	U
V	V	W	U	V	U	W

	WARNING !
⚠️	This procedure may cause motor to change direction. Always make sure that the motor direction is correct after phasing the motor.
⚠️	**WARNING !** Check if motor is operation after phasing. If motor is not phased, using full throttle may cause permanent damage to the motor winding.

3. Changing motor direction

Navigate to AC Calibration, page in app.

Find "Change Dir" and check or uncheck to reverse motor turning direction, then touch "write" button on the bottom. Turn OFF controller using a key, Turn it ON again to check if problem is solved, if not contact E-TECH.

4. Temperature sensor activation

To turn OFF or turn ON the motor temperature sensor, please follow steps below.

Navigate to AC Calibration, page in app.

Find "Motor Temp Sensor" and change values where:

"0"= temperature sensor OFF

"2" = temperature sensor ON

After inputting new settings touch "write" button on the bottom right corner to save the settings. Turn OFF controller using a key, Turn it ON again to check if problem is solved, if not contact E-TECH.

Note: Changing value to "1" will cause wrong readings from the sensor. Setting value to "1" can cause motor to not operate correctly.

		AC Calibration					AC Monitor
TIPS:						←	→
Motor Normal Curr	80	Line Hall amplitude	410	180° Hall		3	
Motor Poles	6	Line Hall High Err	972	240° Hall		2	
Speed Sensor Type	2	Line Hall Low Err	50	300° Hall		6	
Resolver Poles	2	Exchange Phase AB	0	Forw A Rise Hall		5	
Motor Temp Sersor	2	Resolver Start Angle	8129	Forw A Fall Hall		2	
High Temp Cut℃	150	0° Hall	4	Rev A Rise Hall		3	
High Temp Resume	130	60° Hall	5	Rev A Fall Hall		4	
Line Hall Zero	508	120° Hall	1				

KELLY CONTROLS.LLC	BLUETOOTH: CONNECTED	CONNECT	DISCONNECT	READ	WRITE

5. Changing RPM limit

Navigate to AC Calibration, page in app.

To change maximum RPM of the motor please change "Max Speed" parameter to desired maximum RPM for example "2000" after that being done please touch "write" button on the right bottom corner of the app. Turn OFF controller using a key, Turn it ON again to check if problem is solved, if not contact E-TECH.

6. Adjusting regeneration

Navigate to AC Calibration, page in app.

To adjust charging please change BRK_SW Brk Per% parameter accordingly. Accepted values are 0…100, most vessels optimal operational range is between 0…20 value.

 Where "0" minimal drag, no regeneration, "100" maximum drag, maximum regeneration.

AC Calibration					**AC Monitor**
TIPS:				<-	->
BRK_AD Brk %#	0	Accel Release Time	5	IVT BRK Max	5000
RLS_TPS Brk Per%	0	Brake Release Time	5	IVT BRK Min	0
NTL Brk Per%	50	BRK_SW Brk Per%	10	Torque Speed Kp	3000
Accel Time	5	Change Dir Brk%	20	Torque Speed Ki	80
Accel Release Time	5	Compensation Per%	20	Speed Err Limit	3000
KELLY CONTROLS.LLC		BLUETOOTH: CONNECTED	CONNECT	DISCONNECT	READ WRITE