



KELLY APP USER MANUAL

IN ACCORDANCE WITH

E-TECH ELECTRIC DRIVE SYSTEMS

Table of contents

| | |
|--|----|
| 1. Connecting to the Kelly App | 3 |
| 2. Phasing procedure..... | 4 |
| 3. Changing motor direction..... | 7 |
| 4. Temperature sensor activation | 8 |
| 5. Changing RPM limit | 9 |
| 6. Adjusting regeneration..... | 10 |



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

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

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.

The screenshot shows the 'AC Calibration' screen in an application. The title bar at the top is blue and contains 'AC Calibration' and 'AC Monitor'. Below the title bar, there are navigation arrows and a 'TIPS:' section. The main area is a grid of settings. The 'Motor Identify En' field is highlighted with a red box and contains the value 85. The 'WRITE' button at the bottom right is also highlighted with a red box. The bottom status bar is blue and contains 'KELLY CONTROLS.LLC', 'BLUETOOTH: CONNECTED', and buttons for 'CONNECT', 'DISCONNECT', 'READ', and 'WRITE'.

| Parameter | Value | Parameter | Value | Parameter | Value |
|-------------------|----------|---------------------|-------|--------------------|---|
| Module Name | KLS96601 | TPS Dead High | 100 | Startup H-Pedel | <input checked="" type="checkbox"/> Yes |
| User Name | bzbb | TPS Forw MAP | 30 | Brake H-Pedel | <input type="checkbox"/> No |
| Serial Number | 20029627 | TPS Rev MAP | 20 | NTL H-Pedel | <input type="checkbox"/> No |
| Software Version | 01110001 | Brake Type | 0 | Joystick | <input checked="" type="checkbox"/> Yes |
| Controller Volt | 120 | Brake Dead Low | 20 | Three Gears Switch | <input type="checkbox"/> No |
| Low Volt | 36 | Brake Dead High | 80 | Boost | <input type="checkbox"/> No |
| Over Volt | 60 | Max Output Fre | 1000 | Foot Switch | <input type="checkbox"/> No |
| Hall Galvan Rate | 650 | Max Speed | 4000 | SW Level | <input checked="" type="checkbox"/> Yes |
| PhaseCurr Max AD | 320 | Max Forw Speed% | 100 | 0,HIM,1,KIM | <input checked="" type="checkbox"/> Yes |
| Current Percent | 45 | Max Rev Speed% | 100 | Cruise | <input type="checkbox"/> No |
| Bat Current Limit | 90 | MidSpeed Forw Speed | 75 | Anti slip | <input type="checkbox"/> No |
| Motor Identify En | 85 | MidSpeed Rev Speed | 75 | Change Dir | <input type="checkbox"/> No |
| Brake SW Level | 0 | LowSpeed Forw Speed | 75 | | |
| TPS Low | 5 | LowSpeed Rev Speed | 75 | | |
| TPS High | 95 | Three Speed | 1 | | |
| TPS Type | 1 | PWM frequency | 16 | | |
| TPS Dead Low | 15 | | | | |

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 signs 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.

The screenshot shows the 'AC Calibration' screen of an application. The title bar at the top is blue and contains 'AC Calibration' in the center and 'AC Monitor' on the right. Below the title bar, there are navigation arrows. The main area is a grid of parameters. The 'Change Dir' parameter is highlighted with a red box. At the bottom, there are buttons for 'CONNECT', 'DISCONNECT', 'READ', and 'WRITE', with the 'WRITE' button also highlighted in red. A 'READZERO' button is visible below the 'Change Dir' parameter.

| TIPS: | |
|---------------------|---|
| Module Name | KLS96601 |
| User Name | bzbb |
| Serial Number | 20029627 |
| Software Version | 01110001 |
| Controller Volt | 120 |
| Low Volt | 36 |
| Over Volt | 60 |
| Hall Galvan Rate | 650 |
| PhaseCurr Max AD | 320 |
| Current Percent | 45 |
| Bat Current Limit | 90 |
| Motor Identify En | 85 |
| Brake SW Level | 0 |
| TPS Low | 5 |
| TPS High | 95 |
| TPS Type | 1 |
| TPS Dead Low | 15 |
| TPS Dead High | 100 |
| TPS Forw MAP | 30 |
| TPS Rev MAP | 20 |
| Brake Type | 0 |
| Brake Dead Low | 20 |
| Brake Dead High | 80 |
| Max Output Fre | 1000 |
| Max Speed | 4000 |
| Max Forw Speed% | 100 |
| Max Rev Speed% | 100 |
| MidSpeed Forw Speed | 75 |
| MidSpeed Rev Speed | 75 |
| LowSpeed Forw Speed | 75 |
| LowSpeed Rev Speed | 75 |
| Three Speed | 1 |
| PWM frequency | 16 |
| Startup H-Pedel | <input checked="" type="checkbox"/> Yes |
| Brake H-Pedel | <input type="checkbox"/> No |
| NTL H-Pedel | <input type="checkbox"/> No |
| Joystick | <input checked="" type="checkbox"/> Yes |
| Three Gears Switch | <input type="checkbox"/> No |
| Boost | <input type="checkbox"/> No |
| Foot Switch | <input type="checkbox"/> No |
| SW Level | <input checked="" type="checkbox"/> Yes |
| 0,HIM;1,KIM | <input checked="" type="checkbox"/> Yes |
| Cruise | <input type="checkbox"/> No |
| Anti slip | <input type="checkbox"/> No |
| Change Dir | <input type="checkbox"/> No |

KELLY CONTROLS.LLC BLUETOOTH: CONNECTED CONNECT DISCONNECT READ WRITE

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.

The screenshot shows the 'AC Calibration' screen of an application. At the top, there is a blue header with 'AC Calibration' in the center and 'AC Monitor' on the right. Below the header, there is a 'TIPS:' section with two navigation arrows. The main area contains a grid of parameters and their values. The 'Motor Temp Sensor' parameter is highlighted with a red box and has a value of 2. At the bottom, there is a blue footer with 'KELLY CONTROLS.LLC' on the left, 'BLUETOOTH: CONNECTED' in the center, and four buttons: 'CONNECT', 'DISCONNECT', 'READ', and 'WRITE' on the right.

| Parameter | Value | Parameter | Value | Parameter | Value |
|--------------------------|----------|----------------------|-------|------------------|-------|
| 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 Sensor | 2 | Resolver Start Angle | 8129 | Forw A Fall Hall | 2 |
| High Temp Cut°C | 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 | | |

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.

The screenshot shows the 'AC Calibration' screen of an application. The title bar at the top is blue and contains 'AC Calibration' in the center and 'AC Monitor' on the right. Below the title bar, there are navigation arrows and a 'TIPS:' section. The main area is a grid of parameters, each with a label, a value field, and a checkbox. The 'Max Speed' parameter is highlighted with a red box and has a value of 4000. At the bottom, there is a status bar with 'KELLY CONTROLS.LLC', 'BLUETOOTH: CONNECTED', and buttons for 'CONNECT', 'DISCONNECT', 'READ', and 'WRITE'. The 'WRITE' button is also highlighted with a red box.

| Parameter | Value | Checkbox |
|---------------------|----------|---|
| Module Name | KLS96601 | Startup H-Pedel <input checked="" type="checkbox"/> Yes |
| User Name | bzbb | Brake H-Pedel <input type="checkbox"/> No |
| Serial Number | 20029627 | NTL H-Pedel <input type="checkbox"/> No |
| Software Version | 01110001 | Joystick <input checked="" type="checkbox"/> Yes |
| Controller Volt | 120 | Three Gears Switch <input type="checkbox"/> No |
| Low Volt | 36 | Boost <input type="checkbox"/> No |
| Over Volt | 60 | Foot Switch <input type="checkbox"/> No |
| Hall Galvan Rate | 650 | SW Level <input checked="" type="checkbox"/> Yes |
| PhaseCurr Max AD | 320 | 0,HIM,1,KIM <input checked="" type="checkbox"/> Yes |
| Current Percent | 45 | Cruise <input type="checkbox"/> No |
| Bat Current Limit | 90 | Anti slip <input type="checkbox"/> No |
| Motor Identify En | 85 | Change Dir <input type="checkbox"/> No |
| Brake SW Level | 0 | |
| TPS Low | 5 | |
| TPS High | 95 | |
| TPS Type | 1 | |
| TPS Dead Low | 15 | |
| TPS Dead High | 100 | |
| TPS Forw MAP | 30 | |
| TPS Rev MAP | 20 | |
| Brake Type | 0 | |
| Brake Dead Low | 20 | |
| Brake Dead High | 80 | |
| Max Output Fre | 1000 | |
| Max Forw Speed% | 100 | |
| Max Rev Speed% | 100 | |
| MidSpeed Forw Speed | 75 | |
| MidSpeed Rev Speed | 75 | |
| LowSpeed Forw Speed | 75 | |
| LowSpeed Rev Speed | 75 | |
| Three Speed | 1 | |
| PWM frequency | 16 | |

READZERO

KELLY CONTROLS.LLC BLUETOOTH: CONNECTED CONNECT DISCONNECT READ WRITE

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.



The screenshot shows the 'AC Calibration' screen in an application. The title bar at the top is blue and contains the text 'AC Calibration' in a white box on the left and 'AC Monitor' on the right. Below the title bar, there is a 'TIPS:' section with two navigation arrows. The main area contains a table of parameters with their current values. The 'BRK_SW Brk Per%' parameter is highlighted with a red border. At the bottom, there is a blue status bar with 'KELLY CONTROLS.LLC' on the left, 'BLUETOOTH: CONNECTED' in the center, and four buttons: 'CONNECT', 'DISCONNECT', 'READ', and 'WRITE'.

| Parameter | Value | Parameter | Value | Parameter | Value |
|--------------------|-------|--------------------|-------|-----------------|-------|
| 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 |