

Cruise Controller User Guide



With a clear vision of ebikes being embraced as new effective transportation, we set out to provide the best ebikes and bike conversion kits. You ride it as an ordinary bike if you do pedal only. By simply pressing the speed throttle with your thumb, it can quietly drive you up to 20 miles per hour within seconds. Amazingly it even provides cruise speed and anti-theft functions which are only available in highend cars nowadays. Cycling will be redefined with such creative ebikes. It creates incredible experiences for riders. Together, we can achieve

- Cleaner air
- Greener spaces
- Healthier lifestyle
- Less traffic congestion
- Less transportation cost

New Generation Controller -- Technology Breaking Through!



Magic! ... It can drive your ebike even with failed motor hall sensors, throttle, breaker, or all of them failed together!

It acts as sensorless controller when your motor hall effect sensors fail!



[Wiring Diagram \(.pdf\)](#) [\(.jpg\)](#) [\(3D\)](#) -- [Download eDrawing to view \(12.6Mb\)](#)

Special Features:

- [Cruise Speed Control](#)
- Motor hall sensor failure redundancy (Automatically switch to sensorless control)
- Anti-theft alarm and wheel-locking by detection of vibration
- Other failures redundancy (Work with failed throttle and power breaker)
- You can force it to work with higher voltages (e.g 24V controller can drive 36V and 48V motors)
- Report failure components by beeps
- Motor phase self detection and calibration
- Support Forward and Reverse Control
- Excessive Current Protection
- Low Voltage Protection
- High Reliability

Controller Models:

BAC-0281 36V/30A	BAC-0282 48V/30A	BAC-0283 24V/30A



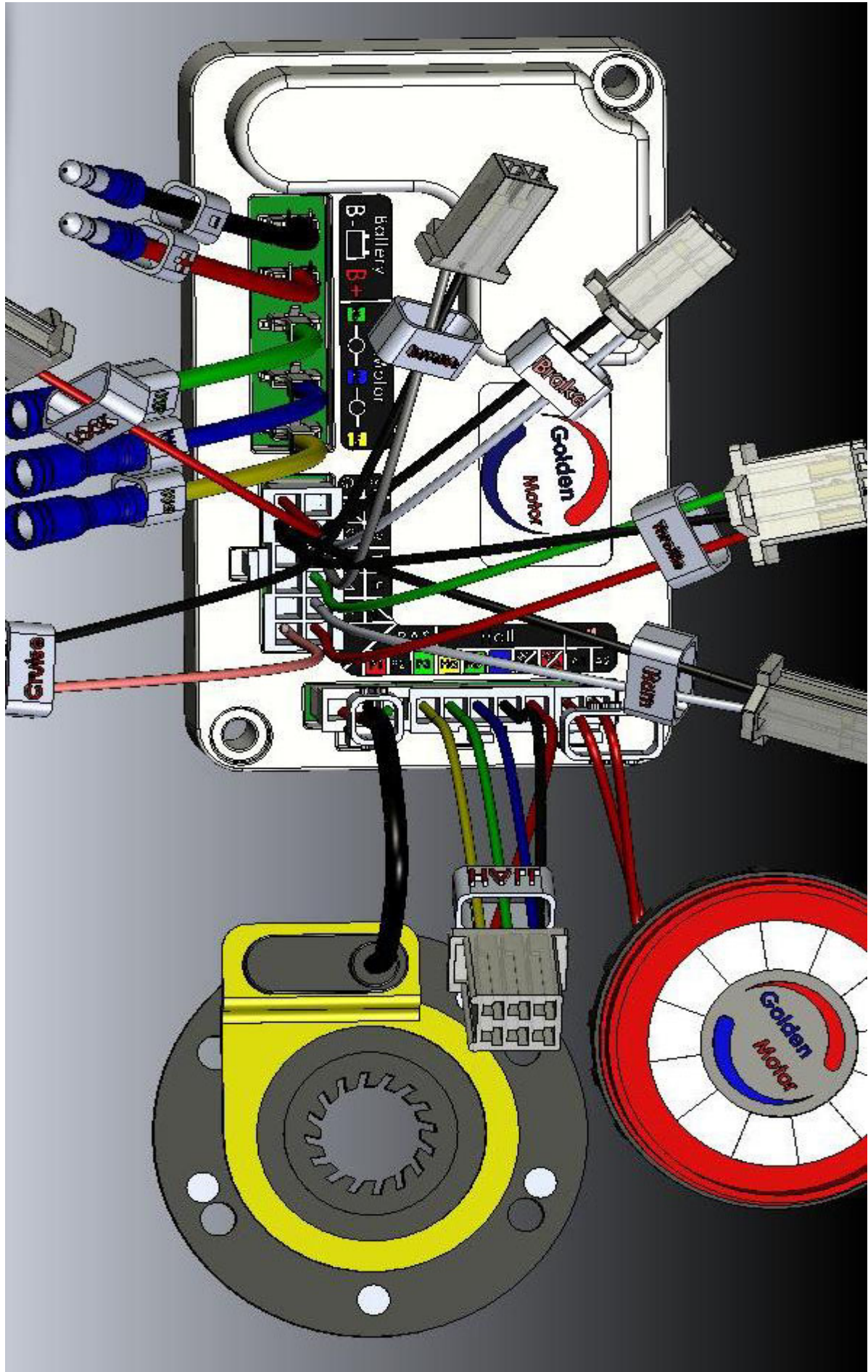
Ebike Control Bar



Thumb Throttle/Light/Battery Gauge



Cruise Control (red) / Horn Button



3D Drawing URL: <http://www.goldenmotor.com/e-Bike-DIY/BAC-028X.EASM>



How to Enable/Disable these Functions/Features?

1. Cruise speed control:

Press the cruise control button when you are riding your ebike at a speed, and then you release the throttle, your ebike will run at that speed (called cruise speed) constantly until you cancel cruise speed by gripping brake lever or pressing cruise button again. This function makes your riding more fun and relax.

2. How to work with motor hall-sensor malfunctions:

The controller will detect motor hall-sensor failure and make **2** beeps of sound, and then it automatically enters into sensorless control mode. Turn the throttle to run the motor. You may need to push/pedal the ebike or vehicle a bit in case the motor does not move from stall (This is sensorless control limitation, but happens seldom).

3. How to work with throttle malfunctions:

If the throttle does not work properly or failed in the middle of your way, the controller will report this error by **3** beeps of sound. You can drive your ebike at half speed by depress the cruise control button. The controller will be back to normal mode automatically upon the problem is resolved.

4. How to work with power brake lever malfunction:

If the power brake lever failed (disconnect from power) in the middle of your way, turn the throttle 4 times or more, the controller will report this error by **4** beeps of sound. You can drive your ebike at half speed by depress the cruise control button. The controller will be back to normal mode automatically upon the problem is resolved.

5. How to work with unknown malfunctions or low voltage battery:

If the ebike does not move and you don't know what is the cause, or low battery situation in the middle of your way, you can try to force the ebike work, by

- Grip and hold the power brake lever
- Press cruise control button **5** times
- Hear a beep sound from horn

Then, you can drive your ebike at half speed by depress the cruise control button. You need to turn off the

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battery power to reset the controller back to normal mode after the problem is resolved.

6. Anti-theft alarm setting:

Logically switch off power to motor (called soft-switch, controller is still on) and take out the battery key, within 10 seconds depress the cruise control button till one beep sound, then release the cruise control button, the vehicle is now protected from theft and motor is electrically locked. Any small movement of vehicle will trigger the siren for 30 seconds, and wheel will make resistance from pedaling.

7. 1+1 Pedal Assist Mode:

Release the throttle to zero (Neutral) position during riding, press cruise speed controller button twice, listen a beep sound, the system enters into pedelec mode.

8. Motor phase Calibrating (Do not use it unless your motor is not from GoldenMotor):

The controller can work brushless motors with different phase angles other than defaulted 120 degree. Below are procedures to let controller match the motor phases:

- Cut-off power to controller and motor
- Grip and hold power brake lever, turn throttle to maximum speed position, depress the cruise control button, turn on the power switch (using battery key)
- Connect battery power to the system, release throttle, release brake lever, release cruise control button.
- Listen 2 beep sound, turn the motor wheel forward and reverse once
- If hear 1 beep sound, motor phase calibrating successfully completed.
- Otherwise, swapping any two of three motor phase wires, and repeat above steps.

Enjoy Your Riding With GoldenMotor