

## The Sigma BC700/800 - How To Install And Why?

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Did you ever want the bragging rights (proof) of your high-speed escapades? How about knowing your actual speed after making gearing changes? Better yet, what about just the accuracy of your stock speedo? What about an exact traveling time... you know without all those traffic lights, gas stops... just pure moving time?

Well, here is your answer! The Sigma BC700 or newer BC800 Cycle Computer. Actually this is made for a bicycle, but the BC700 is very capable of displaying ACCURATE speeds in excess of 170mph. This is very important. . The Sigma BC700 is the only model known to accurately measure high speed! The BC800 is accurate to 167mph. The good news... this little charm costs less than \$30.00 and is everything from required to a trick toy.

The BC700 / BC800 is comprised of 3 parts. The computer that is more like a digital watch, the sensor which picks up the rotational information of the wheel, and the magnet which trips the sensor. Installation is easy and should take no more than 1 hour including planning time.

Understanding how the computer works will also help in the install. The sensor is mounted on a stationary part of the bike like the fork leg. The magnet is mounted to a part that rotates as the wheel spins, but without being in the way of other parts like the brake caliper, brakes, or ... The computer will detect the magnet passing the sensor and register one revolution of the wheel. This revolution will start the E.T. on the computer automatically as well as start the calculation of speed and its variations. If the wheel stops, the sensor will not be detect the magnet passing, and all functions (except the clock) will end. If you have your BC700/800, try this. Insert the computer into the mount, have the computer set to E.T. Now pass the magnet by the sensor with you hand. You will notice the stopwatch has started. If you do not pass the magnet again, the stopwatch will stop. Another example is to pass the magnet back and forth over the sensor (close distance) rapidly, and note the current speed display will read out. Keep this in mind when install the unit and you may find a more innovative install that is not discussed here. Just remember to share the knowledge!! And e-mail us your great ideas.

Here we go... Installation.

Required (varies with application):

- Bike to mount on
- BC700 / BC800
- Metal type epoxy (2 part clay like)
- Clear liquid type epoxy (2 part usually found in syringe dispenser)
- Cable ties
- Length of string (about 4 feet)
- Tape measure (or ruler)
- Some mechanical ability... Never work of your own bike without this one!

First plan on where you want the computer (display) to be placed. On the bars is good, or maybe near the instruments. Constant visibility is good but not required since all information is stored for later viewing. If you have made gearing changes to your bike, then placement for easy visibility may be more important so you can see the constant speed display. Next hold the mount (for the computer) where you want it to be installed and route the wire (pickup sensor attached from factory) to the wheel area. The recommended spot is on the fork leg, which is on the same side as the side stand. This makes the system more invisible to by-passers when the bike is parked. At this point, most will find they need to extend the wires. If you find you are in need of extending the wires... just cut, splice, solder, and seal (electrical tape, heat shrink, or liquid seal) a length of wire in place. \*\* Note an alternative is to order a rear wheel mount (referring to bicycles) kit with your BC700. This kit is nothing more than an additional mount with extended wire that is more than adequate for all install applications, and its cost is only \$10.00. For the tool-impaired or lazy installers this extension kit may be the way to go.

Note: It is not recommended to place the pick-up system on the rear wheel. This is due to wheel spin. In testing, it was conclusive that the rear unit displayed speeds higher by 2%-5%!

OK, now that you have a place for the computer and have the mount wired down the fork tube, you need to see where to install the magnet and pickup sensor. Tolerance is important. Instructions that come with the BC700 call for a maximum distance of 5mm between the magnet and sensor. Keep these suggestions in mind. The sensor and magnet should be kept in the same direction at time of passing each other. You cannot mount the sensor vertical and the magnet horizontal to each other. Here are some suggestions: \* the sensor wire tied to the speedo cable near the wheel hub and the magnet on the disk floater (note! this is very simple and a ten minute installation if the speedo cable applies to your bike!), \* the sensor to the fork leg and magnet on the disk floater (shown below), \* the sensor on a bracket secured (need to make bracket) to the fork leg and magnet on disk floater, \* sensor on back side of brake caliper and magnet on spoke of wheel (patience required, working in close quarters!)

In our illustration below we located a spot for the magnet on the disk floater. In some applications the magnet casing could be or should be removed. In our example below, we just laid the magnet in place, put a little zip tie to hold, and finished it with some clear 2 part epoxy. This sucker ain't goin' nowhere! Then we chose to build up the sensor with clay-like 2-part epoxy. This epoxy give you about 15 minutes to work with and mold, and will be completely cured in 1 hour. We removed the sensor mount back used on bicycles and cut off the little tabs in order to maintain proper clearance tolerances. Then 'eye-balled' the positioning of the sensor. Mix up a bit of metal epoxy, and start molding.

Started with a ball, rolled into a 'tube', placed on fork leg, placed sensor on epoxy, pushed sensor into epoxy, and continued to mold. Once you are in the approximate distance, start your rolling check. This will insure that the tolerance is good and that the metal epoxy is not in the way of moving objects. We used a builder's razor to trim the epoxy at times in order to make a clean cut. When done, we zip tied the sensor as a precautionary move. Since our install, we feel that the epoxy itself, if applied correctly, should do the trick. This application may require a little tweaking to remove the wheel. The sensor could be in the way of the rotor when dropping the wheel. This is remedied by rotating the fork tube ever so slightly or by removing the caliper and rotating the fork tube more. If this is a concern for you because you swap rims/tires often, you may want to use a bracket mount.

Zip tie you wire going up the fork leg tight near the rotor. You don't want the wire rubbing on the rotor, 'cause you won't have much wire after a few minutes! As you secure the wiring, remember to leave enough play between the forks and the mount for full suspension travel (about 2 inches)! If you wheelie, this is really important!

Secure the mount to your desired location with the double-sided tape provided and/or other mounting devices, and your ready for programming.

Finally program the computer per the instructions, and your ready to go. In order to have the speed accurate, you must know the circumference of your front wheel (TIRE). This is where you use the string. Tape the string to the front tire and roll the bike so that the string wraps around the tire. Be sure that the string is not inside the tread, cause this will give a smaller reading. Mark the string where the 2 ends meet. Take the string and tape off, and measure the length of the string. This needs to be entered into the computer as millimeters (mm) not inches (in). To convert inches to millimeters, just divide inches by 0.03937.

That's it... If your speed-reading is about 5mph lower on the BC700... you probably did everything right! It seems that most who install the BC700 find the stock speed to be +5mph. This has also been confirm be radar.

Good luck and enjoy! The Sigma Pick up mounted on the left lower fork leg. Note metal epoxy build-up under pick-up sensor which fills gap to proper clearance and secures the sensor to fork leg. Black 'zip' tie is supplemental to provide 'warm-fuzzy' that your sensor will be there after some hard-core wheelies.

Check clearance while molding epoxy under sensor by wheeling bike back and forth 12". This will ensure that the epoxy is clear of all moving parts! (Such as the disk mounting bolts on the hub) The MAGNET is mounted to the disk 'floater' with clear epoxy, and again 'zip' tied for extra security.

Upper cable tie is to secure the wiring to avoid contact with the rotor. This was later relocated out of site under the fork protector.



The Sigma mounted on the left bar

- The BC700 has triple digit speed display.
- Dual display show:
- (1) Constant current speed display
- (2) Push a button to find:
- Maximum Speed
- Average Speed
- Trip Distance
- Total Distance
- Stop Watch
- Clock
- Auto starts/stops by sensing wheel movement

