

OptiMate 4 Battery Charger

review by Tracy Martin

SINCE 2004, WHEN BMW's 1200cc Boxer engine was introduced, the CAN-BUS (controlled area network) electrical system has been progressively extended to its entire line of motorcycles. While the application theory of CAN-BUS touts the advantages of using this system—no fuses or relays, smaller wiring harnesses and self-diagnostics—its practicality (especially the accessory power outlet) is another matter. In an effort to supply power to heated clothing while also reliably charging the motorcycle's battery, it has been a common practice of BMW owners, and dealerships, to bypass the stock power accessory plug and make a connection directly to the battery.

BMW has fine-tuned the sensitivity of its CAN-BUS controlled power outlets, and most heated clothing will not become randomly disconnected, but connecting the CAN-BUS system is still problematic. The CAN system's ZFE (central chassis electronics) computer expects to see a short-duration pulse with a voltage amplitude of between 14 and 16 volts coming from a battery charger that is connected to the accessory plug. The pulse communicates to the ZFE that there is a CAN-BUS compliant charger waiting to connect to the battery. When the ZFE receives the pulse it opens the connection and allows battery charging to commence. BMW recommends that if the charger does not connect, turning on the ignition key will allow charging to take place. In fact, the ignition key method will allow any battery charger to connect to the ZFE computer and the battery.

However, due to unforeseen circumstances, the ZFE computer is not consistent in recognizing both CAN-BUS compliant and standard battery chargers trying to connect to its system to charge the battery. Even using the ignition on/off method, battery charging will end if the charging voltage exceeds 14.2 to 14.3 volts or charging current drops below 200mA to 400mA. On some BMW motorcycles battery voltage has to be below 12.7 volts before the charger will connect at all. The accessory socket may remain open (connected) after these conditions have taken place for between 30 seconds to up to 15 minutes.

Smart battery chargers, including the BMW CAN-BUS purposed charger, indicate when charging is occurring via a green LED on the charger and many an owner has assumed that battery charging was taking place only to find that days, weeks or months later, the charger was not connected and the battery has gone dead. Not only are owners faced with a dead battery, but those who purchased the BMW-branded CAN-BUS charger for \$165 (over twice what a typical smart charger costs) may be less than satisfied.

But TecMate International manufactures a smart charger called the OptiMate 4 Dual Program battery charger that the company claims will reliably and consistently connect with BMW's CAN-BUS system. Because BMW's programming of its CAN-BUS

system does not seem to be consistent between models, years and motorcycles, the OptiMate 4's charging and testing algorithm has been adapted accordingly. The OptiMate 4's pulse matches the motorcycle that it's connected to, and it measures how long the socket remains on after charging has reached 14.2 to 14.4 volts. This provides continued battery charging, and the battery charger allows the on-board CAN-BUS program to reset periodically as it was designed to do.

In addition, the OptiMate 4 can detect a sudden loss of voltage at the socket (if the ZFE computer disconnects the battery, for example) during charging or testing sequences. If it does, it will reset itself and signal the ZFE to reopen the connection to the battery.

The OptiMate 4 has been extensively tested on all models/years of BMWs that use the CAN-BUS system, and will automatically connect to the battery, and the ignition does not have to be switched on or off for the connection to take place. The charger will even run a sequence of battery tests while connected to the CAN-BUS controlled socket. The OptiMate 4

can also be used to charge and maintain batteries on motorcycles other than BMWs. Switching between the Standard or CAN-BUS programs is simple and only takes a few seconds. The charger tests for the following: dead or shorted battery cells, voltage retention tests (battery state of health) and de-sulphation and recovery. The charger can be left connected to any battery for extended periods of time

without causing damage. In fact, it can even recover a dead battery that has as little as 2 volts.

We enlisted Battley's Cycles of Gaithersburg, Maryland, to try out the OptiMate 4 for several months. In that time it never failed to connect to a wide variety of CAN-BUS equipped BMWs. It will even reconnect if there is an AC power failure—a useful feature for long-term battery charging in a garage or storage unit. The only issue we found is the interpretation of test results from the 10 flashing LED lights on the charger. Good instructions are provided both with the charger and on line, but you'll need them to figure out what the charger is trying to tell you. If you aren't concerned with testing and only want to use the charger for battery maintenance, just connect the charger and forget about it.

The OptiMate 4 has a three-year warranty and is CE-Certified. It comes with a weather-protected, fused SAE connection that can be permanently mounted, SAE battery clips for direct connection to any battery and a DIN socket-to-SAE connector for use with BMW's accessory socket. The OptiMate 4 Dual Program charger (BMW CAN compatible) sells for \$89.90 and the standard version is \$74.90. If you own a BMW with the CAN-BUS electrical system, this battery charger is highly recommended.

OptiMate 4 Dual Program, \$89.90—TecMate North America, 1100 Invicta Drive, #22; Oakville, ON L6H 2K9, Canada; 905-337-2095; www.tecmate.com



Promach Dual Tool for BMWs

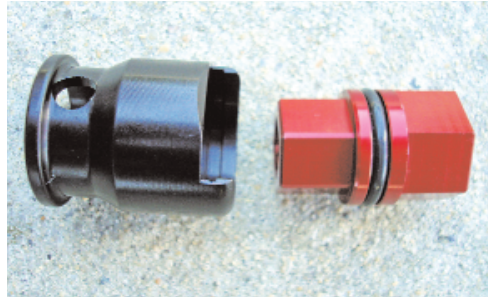


review by Moshe K. Levy

LONGTIME BMW RIDERS may remember the comprehensive tool kits included on the Airheads of yesteryear—serious kits of substantial quality tools that could be used to perform literally any roadside repair—which make today’s R1200 factory tool kits seem positively austere. As a result, many riders create their own kits to supplement the basics given to them as standard equipment with the newer motorcycles. To them, whenever possible, it is preferred to use tools that are well-made, take up as little space as possible, and are lightweight. Multiple functions are definitely icing on the cake.

Enter Promach’s Dual Tool, advertised for use on BMW R1200GS, RT, S, and R models. This American-made, CNC-machined, 6061-T6 anodized aluminum tool replaces both BMW’s spindly plastic spark plug coil cap remover and any specialty tools previously carried to remove and install the 22mm hex front axle.

Using the tool is literally a snap. The black “outer” piece is the coil cap remover required for typical R-bike cylinder head service (spark plug replacement, etc.), featuring cross-drilled holes in which a screwdriver or small bar can be inserted for extra leverage—the screwdriver included in the BMW toolkit is a perfect fit. The red “inner” piece has a 22mm hex on one end and a 19mm hex on the other. The 22mm is inserted into R1200 axles and the 19mm can be used with a socket, wrench, or combo wrench, as well as an inner square hole for use with 3/8” ratchet, breaker bar, torque wrench, etc.



The “outer” and “inner” pieces of the Dual Tool fit together, via a friction O-ring, into a remarkably compact package measuring a miniscule 1.5” x 1.25” and weighing only 1.8 oz! Promach claims to have tested the axle removal tool to 100 lb.-ft., which is over twice the actual torque required to do this job. Discerning tool aficionados will surely appreciate the precise fit of the tool and the effective minimalism of its design.

Promach has been advertising the tool mainly for 2005-2009 BMW R1200 “Hexhead” models, but we used the coil cap tool repeatedly on 2003-2004 production Oilhead R-bikes (which also use “COP” AKA “stick coils,”) as well as the 2010+ “Camhead” DOHC variants of the venerable R-bike boxer engine. Likewise, the 22mm front axle tool will also work on 1200/1300cc K-bikes, which, like their R-brethren, use a 22mm hex, while the 19mm end will work on the F800 series front axles. So, in fact, the tool is much more versatile than advertised.

All in all, this tool definitely accomplishes its mission of quality, compactness, and multi-functionality, freeing up valuable space in the rider’s tool kit. It sells for \$45, plus shipping and handling, or you can purchase either the spark plug removal tool (black “outer” piece) or the front axle removal tool (red “inner” piece) separately for \$25 each, plus shipping and handling. Those interested in further information can see the tool in action on Youtube by searching for “Promach Dual Tool.”

Promach Dual Tool for BMWs, \$45 plus S&H—Promach, P.O. Box 234; Summers, MT; www.promachdualtool.com

AltRider R1200GS Headlight Guard



review by Scott Rousseau

WHILE PERFORMING A walk-around of our test R1200GS, we got to thinking about the vulnerability of its sealed-beam, 2 x 55W Halogen headlight unit. Despite being perched higher than most streetbike headlights, it’s easy to imagine how an errant rock thrown from another machine while riding off-road, or even from a semi-truck on the freeway, could damage the headlight lens, leaving an ugly scar at best, or worse, destroying the headlight unit altogether. Unfortunately, the GS headlight lens isn’t a separate component, so if you damage it, you have to replace the entire unit. Our local BMW dealer, Irv Seaver Motorcycles of Orange, California, quoted us a replacement cost of \$424.01. Ouch!

Several companies offer guards to prevent such damage from occurring and Seattle-based AltRider, LLC, is one of the newer kids on the block. AltRider recently sent us its BMW R1200GS Lexan Headlight Guard and Anti-Glare Guard to try.

The Headlight Guard consists of a 3/16” Lexan shield, with abrasion-resistant coating on both sides, that locates just in front of the GS headlight. The shield is bolted to a 2mm laser cut stainless steel frame that attaches to frame arms, made of the same material and thickness, via Dzus fasteners for quick and easy installation and removal. The arms sandwich between the OEM



turn signal stalks and the windscreen frame for a simple, neat and clean appearance. Simply detach the stalks by removing the stock Torx screws, rotate them to allow the open end of the arms to slip into place, rotate them again to re-engage the windshield frame and re-tighten the Torx screws. Our installation took less than 10 minutes, and AltRider’s detailed instruction sheet is clearly written with step-by-step photos.

Made of impact-resistant molded urethane, the Anti-Glare Guard is designed to cut down on the reflective glare off the back of the Headlight Guard when riding at night, and AltRider includes it with the Headlight Guard at no extra charge (\$39.21 when sold separately). It mounts via the two headlight lens frame screws at the top of the headlight assembly. While AltRider suggested simply removing the two front windscreen fasteners above the headlight and rocking the windscreen backward to access the screws, we found it easier to remove the screen entirely. The Anti-Glare Guard includes two longer Torx screws to replace the stock screws, and take it from us—do not try to reuse the stock screws unless you enjoy feeling frustrated.

Now we have no worries about road debris damaging our GS’ headlight, and as an added bonus, it’s easier to remove bugs and grime from the flat Lexan shield than from the stock headlight.

AltRider Lexan Headlight Guard, \$166.46 (Anti-Glare Guard included)—AltRider, LLC, 4000 Aurora Ave., Suite 100; Seattle, WA 98103; 206-922-3618; www.altrider.com