BH and Twinburst ask: Why use 1 motor when you can use 2?

All-wheel drive is a common feature on SUVs and other automobiles that are made for traction in snow and ice. But an AWD e-bike?

BH Evo Big Foot Pro

Taking a cue from their counterparts in the car industry, Spain's **BH Emotion** B3-204 has launched a second e-bike with hub motors on both the front and the rear wheels.

A new French company, **Twinburst,** ZH-311 has also gotten into the segment. It is offering four dual-motor bike models for 2016.

On the BH system, sensors detect differential rotation between the wheels and automatically adjust the power levels for each motor — a 350W motor in the rear and 250W in front.

"Evo AWD e-bikes have three sensors; one torque and a rotation sensor in each wheel," BH Emotion's Alvaro Olasolo said. "The controller is able to sense when there is more than a 5 percent difference in rotational speed between the wheels and adjusts power accordingly, to prevent the wheels from skidding."

BH launched its first AWD bike, the Evo Snow, last year. Here at Eurobike, BH is adding a fat bike version, the Evo Big Foot Pro, to the mix. Both models get an updated controller to improve the AWD performance.

The company says the Evo Snow was inspired by demand from Nordic countries. It's also available in the United States.

"Most Evos sold were in Nordic countries, but Germany had good sales, too," Olasolo said, adding that South Africa and other sandy locations also were good markets.

The bikes offer four levels of power assistance, from 70 percent to 375 percent of rider effort. Riders can also choose to power only the front or the rear wheel.

The Evo Snow is a 29er, while the Evo Big Foot Pro uses 26-inch wheels with fat bike tires.

Upgrades include a winter battery cover, rear carrier for spare battery and GPS tracking for the Big Foot Pro.

Because the AWD bikes have combined motor power greater than 250W, and can reach assisted speed of 32 kilometers an hour (20 miles an hour), they are considered "off-road" vehicles in the EU.

Twinburst, from Marseille, France, is launching four models of what it calls 2WD bikes: The BigJump, a full-suspension e-mountain bike; the Jump, a hardtail mountain bike; the Urban e-city bike; and the Trekk e-trekking bike.

Twinburst bikes incorporate regenerative braking systems on both wheels, which the company says increases the bikes' range by 30 percent to 100 percent.

An onboard computer oversees a traction control system which distributes power as needed to the front and rear wheels, changing the relative distribution as needed. For example, if one wheel begins to spin, the system cuts power to that wheel until traction is restored.

Twinburst says its controller also serves as an anti-lock braking system for both wheels and automatically adjusts the amount of braking force that's applied to the front and rear wheels.

Although the Twinburst bikes don't need smartphones to operate, a riders' smartphone serves as the bike's dashboard.

Protected in a waterproof, shock-absorbing case, the phone connects with the computer via Bluetooth and tracks speed, the engine's power, the battery status, and other functions.

The phone also works with the sensors in the pedal for GPS and mapping services. It also tracks the number of calories burned on a ride.

And to make sure the phone doesn't run out of juice, Twinburst includes a USB charging plug in the bike's cockpit.

■ **RP/DM**

Twinburst BigJump