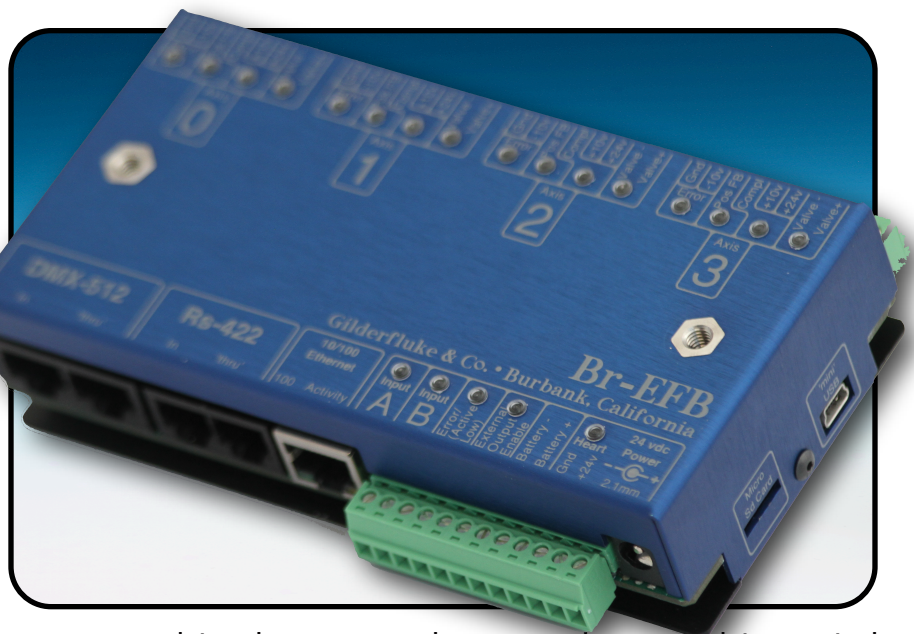# Br-EFB
## Four Axis Electronic FeedBack Controller with Compliance

The **Br-EFB** is used when you need to close an analog servo loop used to control pneumatic, hydraulic or electric actuators. These are used in animated shows, motion bases, industrial systems, special effects, fountains, and more.

An EFB card measures the position of an actuator, compares this with the position it is being told to be at, and opens or closes the valve (or turns on or off the motor) as needed to get the actuator to where it should be. The **Br-EFB** does this thousands of time each second. The **Br-EFB** also supports 'compliance', which adds force feedback to the loop.

Features of the Br-EFB include:

- Up to four independent axis of PID Electronic Feedback Control, with optional compliance on each axis.
- Resolution of sixteen bits for each axis being controlled.
- Sixteen bit resolution +/- 10 vdc outputs can run most servo valves, VFDs, BLDC and motor drivers.
- Highly oversampled PID loop for outputs smooth enough to run even the largest motion bases.
- Self adjusting initial setup, and automatic adjustment while running. You can also set it up manually.
- Actuator endpoints can be limited anywhere within the range of movement, and even reversed.
- Each axis has a removable screw terminal block for connections to the actuator: Ground and 24 VDC for powering the valve and feedback sensors (PTC fused at 1.1 Amp), Position Feedback Input (0-5, +/-5, 0-10 or +/-10 dc), Compliance feedback input (0-5, +/-5, 0-10 or +/-10 dc), -10/+10 vdc reference for using potentiometers for position feedback, and positive and negative outputs for controlling the valve/motor.
- 'Enable' input physically disconnects the Br-EFB from the valves, and connects them to 'Battery' input. The 'Battery' voltage can then be used to 'home' the actuators in a power fail or E-Stop situation.
- Shows are stored on standard micro Sd/SdHC/SdXC Flash cards for a virtually unlimited capacity (up to 2 TBytes). Like all GilderGear, up to two hundred fifty-five shows can be loaded onto a Br-EFB.
- Networkable! Transmits a full 512 channel DMX-512 universe to act as a network 'master', or receives a full 512 channel DMX-512 universe to use as a 'slave'. Uses USITT-standard for DMX-512 over Rj-45.
- Ethernet (10/100) for configuration, monitoring and communicating with the Br-EFB.
- Built-in web pages allows configuration using a web browser on any computer, tablet or smart phone.
- Triggerable! Two non-polarized optoisolated inputs or the ethernet, RS-422 or USB port can be used to start, stop, pause, continue, or access shows. Rising or falling edges can trigger different actions, including random and sequential playlist commands. Rj-12 Rs-422 input/output/thru for easy daisy-chaining.
- Sturdy aluminum enclosure. Mounts in Snap Track, DIN rail (optional), or just Velcro or screw it down.
- The Br-EFB is designed to run on 24 vdc.
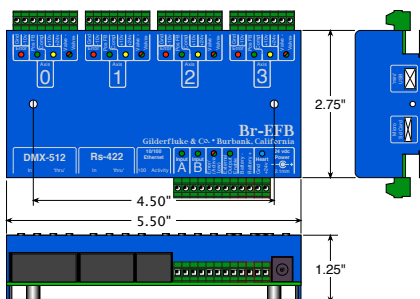
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