



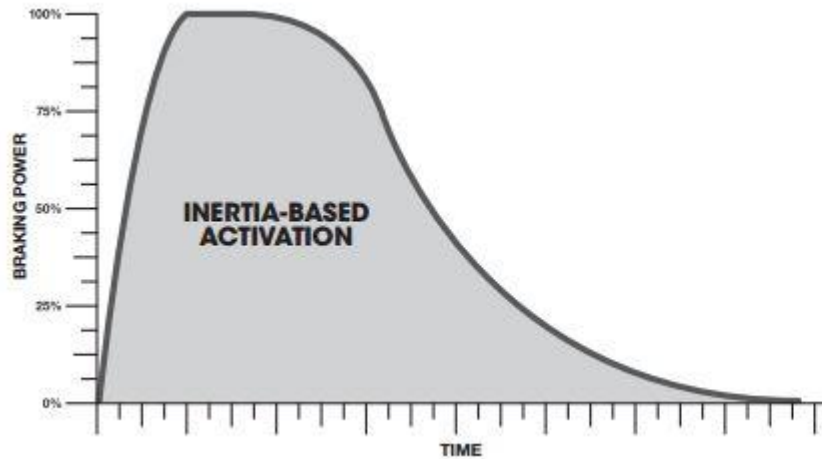
Brake Controllers



Two Types of Brake Controllers

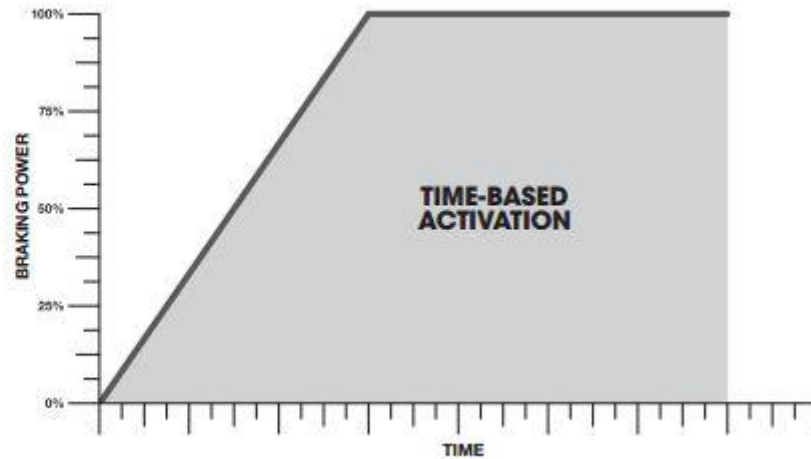
Proportional activation

- Using an integrated circuit called an accelerometer, proportional brake controllers (or inertia-based) sense the movement of the tow vehicle and adjust the power to the trailer brakes accordingly.



Time-delay activation

- Time-delay brake controllers apply a steadily increasing amount of brake power, based on the gain setting.



Most states require a brake control on trailers over 3,000 lbs.

Two Types of Brake Controllers

- Proportional activation automatically adjusts power output when going up or down a hill.



Note: Values represented are for illustration only. The actual preset and adaptive values may differ from those shown here.

Echo® Series

Three Ways to Install



Echo Mobile #51180

- Easy transfer between vehicles



Echo Under-Dash #51190

- Interior-mounted below dash



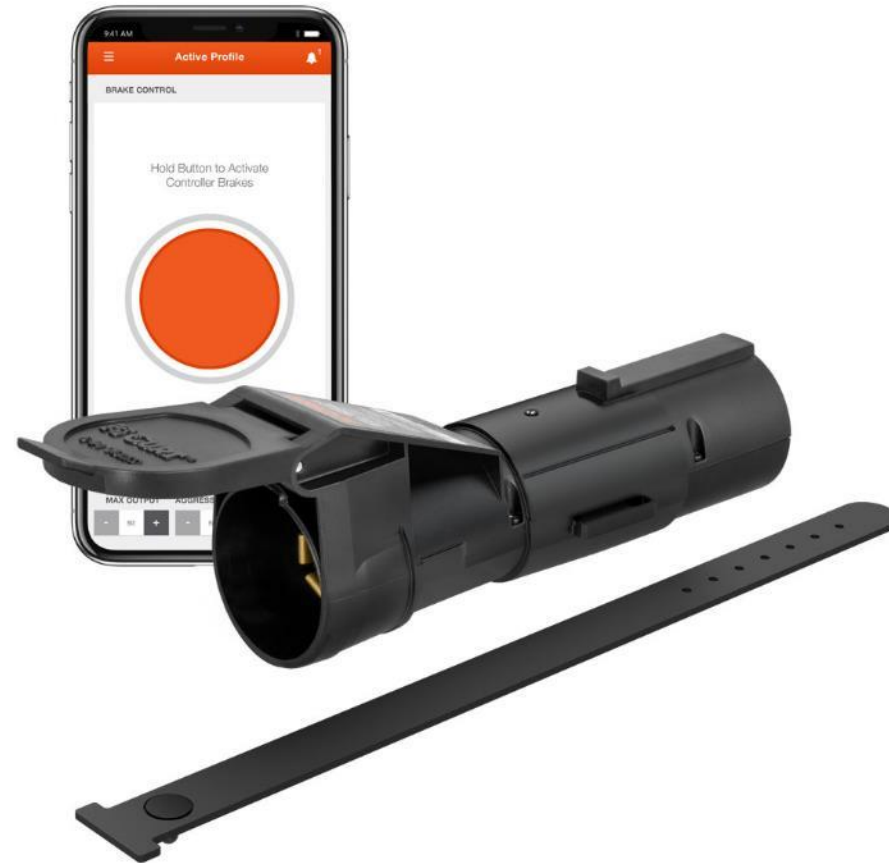
Echo In-Line #51200

- Exterior-mounted behind bumper

World's First

Echo Mobile Brake Controller #51180

- Wireless, portable design allows for easy transfer from one vehicle to another
- Bluetooth connection to control all brake settings from your smartphone
- Custom-designed app monitors brake activity and sends status updates
- Downloadable app available for Apple and Android OS
- Stores multiple vehicle-trailer profiles
- Allows incoming calls to be received while app is running
- Triple-axis, motion-sensing accelerometer for highly responsive, smooth stops



Echo Mobile Brake Controller #51180

- Zero-tool, plug-and-play install between vehicle-trailer 7-way connectors
- Potted circuit board is sealed off from the elements for lasting durability
- Retention strap and locking tab help keep Echo firmly installed into 7-way
- Multi-color LED indicator for easy setup and troubleshooting
- Automatic calibration reduces setup requirements
- Compatible with low-voltage systems, PWM systems, ABS and cruise control
- Built-in reverse-polarity and short-circuit protection
- **Limited lifetime warranty**



Echo® Under-Dash Brake Controller #51190

- Bluetooth connection to control all brake settings from your smartphone
- Module can be mounted out of sight
- Plug-and-play install with vehicle-specific quick plug harness (sold separately)
- Simple installation using included adhesive pad or zip ties
- Triple-axis, motion-sensing accelerometer for highly responsive, smooth stops
- Stores multiple trailer profiles
- Operates 2-8 trailer brakes at a time (1-4 axles)
- Downloadable app available for Apple iOS and Android OS



Echo® In-Line Brake Controller #51200

- Bluetooth connection to control all brake settings from your smartphone
- Plugs in behind existing 7-way socket with USCAR connectors
- Waterproof enclosure seals and protects circuits against the elements
- Simple installation using included adhesive pad or zip ties
- Triple-axis, motion-sensing accelerometer for highly responsive, smooth stops
- Stores multiple trailer profiles
- Operates 2-8 trailer brakes at a time (1-4 axles)
- Downloadable app available for Apple iOS and Android OS



Echo® Manual Override Button #51189

- Enables manual activation of trailer brakes, using Echo® and phone app
- App must be running for button to operate
- Wireless accessory supports hands-free driving
- Compatible with Echo® and programmable for other Flic applications
- Long-range Bluetooth maintains a strong connection
- Includes double-sided adhesive pad for easy mounting on the dash
- Small-footprint, 1-1/8" diameter
- Includes CR2016 battery



Spectrum™ Integrated Brake Controller #51170

- Controls all brake settings with a simple push-button rotary knob
- Clean, dash-mounted, OEM-style user interface with 10 tri-color LEDs
- Main module can be mounted anywhere, at any orientation, out of sight
- Highly responsive, smooth stops with triple-axis, motion-sensing accelerometer
- Easily accessible manual override with the press of a button
- Features two installation options: drill mount or surface adhesive mount
- Electric over hydraulic capability





BRAKE CONTROLLERS



Spectrum™ Integrated Brake Controller #51170

- Main module can be mounted anywhere, behind or below the dash, out of sight



Spectrum™ Integrated Brake Controller #51170

MODES



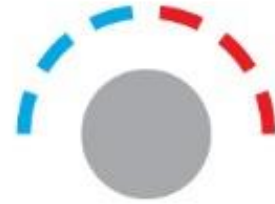
Manual
(red)



Brightness
(white)



Output
(green - red)



Sensitivity
(blue - red)

INDICATORS



Calibration
(ramp-up)



Overloaded
(flashing)



Disconnected
(flashing)



Assure™ Brake Controller with Dynamic Screen #51160

- Pressure-sensitive manual override button for precise braking power
- Large, high-quality 1-1/2" OLED screen displays full text readout
- Sleek, low-profile design with tactile buttons
- Triple-axis, motion-sensing accelerometer for highly responsive, smooth stops
- Diagnostic alerts notify of potential problems like low voltage or disconnect
- Equipped with a quick plug for easy, plug-and-play installation



TriFlex™ Brake Controller #51140

- Triple-axis, motion-sensing accelerometer for highly responsive, smooth stops
- Nine levels of sensitivity adjustment for varying loads or driving conditions
- User-selectable power output and trailer brake light activation
- Digital display with 0.1 increments
- Compact size: 3-1/4" wide, 4" deep, 7/8" tall



Time-Delay Brake Controllers

Discovery™ #51120

- Increases brake power based on gain setting and sensitivity adjustment
- Digital display
- Mounts anywhere in the vehicle
- Operates 2 - 8 brakes



Venturer™ #51110

- Increases brake power based on gain setting and sensitivity adjustment
- LED display
- Mounts anywhere in the vehicle
- Operates 2 - 6 brakes

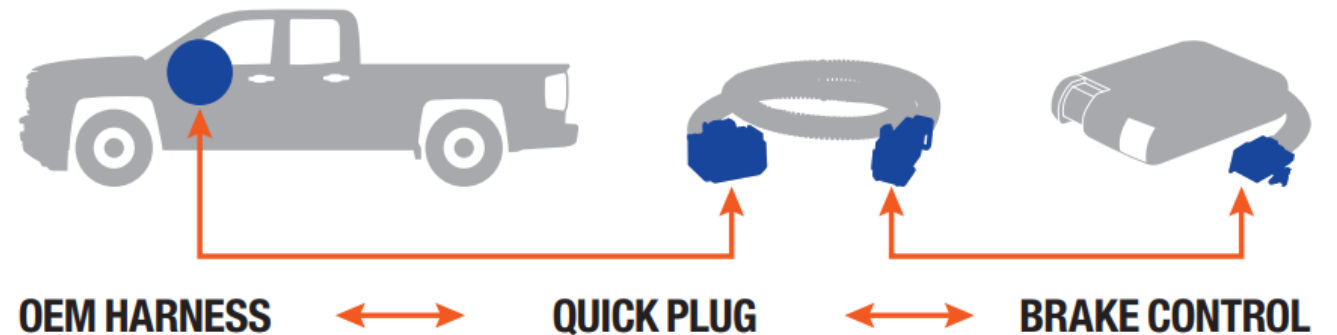


Brake Controller Installation

- Equipped with quick plugs for fast, easy, vehicle-specific installation
- Include mounting hardware
- Optional spare bracket allows for convenient use of the same brake control in multiple vehicles



QUICK PLUG EQUIPPED



Quick Comparison



Echo mobile



Echo under-dash



Echo in-line



Spectrum



Assure



TriFlex



Discovery



Venturer

Name	Part#	Axles / Brakes	Activation	Display	Mount Angle	Level Adjust	Warranty
Echo mobile	51180	1-2 / 2-4	Tri-axis inertia	Phone app	Any	Auto	Limited lifetime
Echo under-dash	51190	1-4 / 2-8	Tri-axis inertia	Phone app	Any	Auto	Limited lifetime
Echo in-line	51200	1-4 / 2-8	Tri-axis inertia	Phone app	Any	Auto	Limited lifetime
Spectrum	51170	1-4 / 2-8	Tri-axis inertia	Tri-color LED	Any	Auto	Limited lifetime
Assure	51160	1-4 / 2-8	Tri-axis inertia	OLED screen	Any	Auto	Limited lifetime
TriFlex	51140	1-4 / 2-8	Tri-axis inertia	Digital	-20° to +70°	Auto	Limited lifetime
Discovery	51120	1-4 / 2-8	Time-delay	Digital	Any	Auto	Limited lifetime
Venturer	51110	1-3 / 2-6	Time-delay	LED	Any	Auto	Limited lifetime

How to Select a Brake Controller

- There are a few factors to consider when selecting a brake controller. The following questions will help determine which is the best fit.

What are they towing?

- For heavy or fragile loads, proportional brake controllers perform smoother stops for less stress on the vehicle and trailer.
- For lighter, non-sensitive loads, a time-delay controller may be sufficient.

How often do they tow?

- If they tow frequently, a proportional controller is recommended.
- If they tow only a few times a year, a proportional controller is still preferred to provide smooth stops. However, a time-delay controller can also be used.

Limited Lifetime Warranty

- CURT provides limited lifetime warranty coverage against defects in factory workmanship and materials for CURT products sold by authorized CURT dealers for use by retail (end use) consumers.
- https://storage.googleapis.com/curt-group-warranties/CURT_Warranty_2018.02.09.pdf

Product	Workmanship & Materials	Components & Parts	Finishings & Coatings
Hitches	Lifetime	One-year	One-year
Brake controls	Lifetime	One-year	One-year
Electrical and wiring	One-year	One-year	One-year
Other accessories	Lifetime	One-year	One-year



LIMITED LIFETIME WARRANTY

CURT MANUFACTURING, LLC ("CURT") provides limited lifetime warranty coverage against defects in factory workmanship and materials for CURT® products ("Products") sold by authorized CURT dealers for use by retail (end use) consumers. This Limited Warranty is provided only to the original Product consumer, and applies only to the original installation. This Limited Warranty is not transferable and does not extend or apply to anyone else. For consumers in the U.S., this Limited Warranty gives you specific legal rights; you also may have other rights, which vary from state to state.

This Limited Warranty is the sole and exclusive warranty provided by CURT, and all other warranties and conditions are excluded and disclaimed. **UNDER THE LAW OF CERTAIN STATES, THERE MAY BE NO IMPLIED CONDITIONS OR WARRANTIES FROM CURT APPLICABLE TO YOUR PRODUCT, AND ALL IMPLIED CONDITIONS OR WARRANTIES (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE) ARE EXCLUDED AND DISCLAIMED WHERE ALLOWED BY LAW.** If implied warranties are imposed under any applicable state law, all such implied warranties are limited to the duration of the applicable provisions of this Limited Warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

COVERED PRODUCTS AND LIMITATIONS

CURT provides the following Limited Warranty coverage:

Product	Workmanship & Materials	Components & Parts	Finishings & Coatings
Hitches	Lifetime	One-year	One-year
Brake controls	Lifetime	One-year	One-year
Electrical and wiring	One-year	One-year	One-year
Other accessories	Lifetime	One-year	One-year

Each of the warranty coverage periods runs from the date of purchase of the Product (proof of purchase is required), and applies only to warranted defects that first occur and are reported to CURT within the applicable warranty period. CURT retains the right to determine to its reasonable satisfaction whether any claimed defect is covered by this Limited Warranty.

Certain items are excluded from Limited Warranty coverage by CURT, and this Limited Warranty coverage does not apply to:

- Wear and tear from normal use, including damage from road debris
- Improper product selection, application, installation or maintenance

- Modifications, including the attachment of other hardware or components
- Misuse, abuse, overloading, improper handling or handling, accident
- Corrosion or damage due to environmental conditions

REMEDIES UNDER THIS LIMITED WARRANTY

If a defect covered by this warranty occurs, CURT will repair or replace the Product, or refund the purchase price, in its sole discretion. This "repair, replacement or refund" remedy is the **sole and exclusive remedy** under this Limited Warranty. CURT has **no responsibility or liability for any incidental or consequential damages**, such as loss of use of vehicles or trailers, towing charges, storage charges, the carriage, labor and service charges for removing or reinstalling products, loss of or damage to personal property, or interest or finance charges, all of which are **specifically excluded and disclaimed** from this Limited Warranty. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

RESPONSIBILITY OF PURCHASER

The Purchaser must have proof of purchase to obtain service under this Limited Warranty. Contact CURT for a Returned Goods Authorization (RGA) and return instructions. CURT will not accept Products unless an RGA has been issued. The Purchaser must deliver the Product to CURT or an authorized CURT dealer along with the RGA number and proof of purchase.

The CURT Limited Warranty policy in effect on the date you purchased your Product determines the applicable warranty coverage, and subsequent or prior CURT warranties are not applicable to your Product. The terms of this Limited Warranty cannot be changed or modified, except by a written agreement signed by an officer of CURT. CURT reserves the right to improve its products through changes in design or materials without being obligated to the owners of the Products of the same or similar models.

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