

A compact and quick to install alternative to driving robots

# Flex-0™



The Flex-0 drive-by-wire controller provides a compact solution for controlling a vehicle's built-in actuators via CAN messages. By eliminating the need for driving robots, Flex-0 allows for swift setup time and reduced risk of damage.

With our comprehensive software suite, including Path Following and Synchro™, the Flex-0 can be used to perform standard tests, and create complex scenarios synchronising multiple vehicles and targets.

The Flex-0 can also be used as part of an AB Dynamics driverless system, and it can be integrated with autonomous vehicles to enable precise testing, even when there is no steering wheel and pedals in the test vehicle.

## Secure integration

Flex-0 communicates with a vehicle's systems using the CAN protocol, a connection only possible by collaboration between AB Dynamics and the OEM. We offer a standard CAN control protocol that can be adapted to your vehicle's requirements, ensuring the confidentiality of the by-wire interface, eliminating the need for third-party disclosure.



Fast setup time compared with installing driving robots



Secure integration with vehicle CAN interface



Uses our RC Software to easily setup, execute, and review tests



Supports Synchro for precise synchronisation with other vehicles



Cost-effective alternative to driving robots



Compatible with OxTS, GeneSys and Racelogic GNSS/IMUs



Can be used as part of a driverless system for durability and misuse testing



Ideal for AVs that don't have traditional manual steering and pedal controls

# Specifications

Weight	3kg
Dimensions	380 x 220 x 65mm
Data capture frequency	User selectable up to 2kHz
Digital I/O	4kHz scan frequency
Analogue inputs (8 channels)	16-bit resolution at 4kHz sample frequency
Power input	11-15V DC (11V nominal), max current with S-Brake 15A

## Multi-vehicle synchronisation

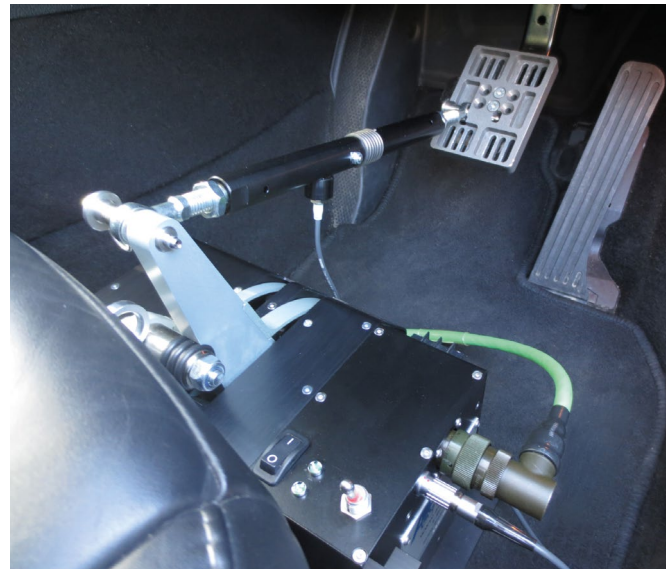
With driver assistance systems becoming increasingly sophisticated, the scenarios needed to test them are becoming more realistic and complex. Together with our Synchro software, Flex-0 is ideal for use in scenarios that include multiple vehicles and targets.

Synchro captures real-time vehicle-to-object data enabling any combination of systems (Flex-0-controlled vehicles, robot-controlled vehicles and ADAS platforms) to be coordinated and synchronised to the test vehicle. Accurate vehicle positioning and speed control is ensured across all actors, streamlining the process of running multi-object tests.

## Driverless safety

When used in a driverless configuration, the Flex-0 is linked to the S-Brake safety brake and engine kill system. This connection allows the Flex-0 to immediately stop the vehicle in case of an emergency, such as failure in either the vehicle's main control system or its CAN communications. The auxiliary safety system is designed with comprehensive redundancy and self-checking functionality to further minimise the risk of an uncontrolled vehicle.

The Flex-0 and S-Brake continuously send watchdog signals between each other so that in the event of a failure of one unit, the other can stop the vehicle. In addition, both units are connected to a base station via a radio link which enables the vehicle to be programmed and controlled remotely. These systems also ensure that the vehicle is stopped in the event of a radio communications failure.



S-Brake safety actuator

## About AB Dynamics

AB Dynamics is a leading global provider of automotive test and verification solutions that facilitate the development of vehicles that are safer, more efficient and sustainable. As part of the AB Dynamics Group of companies we enable customers to develop and test in virtual environments, validate on the track and then evaluate vehicles on public roads.

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SP05 Issue 8

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