Cam and Crank Converter BOT™ (C-BOT)
Tracking Module

Description
Southwest Research Institute’s® (SwRI®) Converter BOT™ (C-BOT) element is a flexible engine position tracking module designed specifically to translate arbitrary cam and crank patterns into OEM patterns. Featuring a dual-channel VR signal conditioner and Xilinx® FPGA, the C-BOT may be configured by SwRI engineers to accommodate any standard or custom pattern. The C-BOT operates on standard (12V) vehicle power, and outputs 5V signals supplying up to 24 mA.

Features
Multiple inputs
- Dual variable reluctance or Hall effect sensor inputs
- Arbitrary cam and crank patterns

Predictive position estimation
- Resolution ~1/10th crank angle degree (CAD)
- Linear approximation between tooth edges
- Higher-order approximation optional

12V DC powered

Test cell and vehicle mountable

Environmentally sealed
- Water-resistant enclosure
- Heavy-duty 40-pin Deutsch® DRC connector
  - Mates with included Deutsch® plug

Multiple digital outputs
- Crank
  - Arbitrary pattern output
  - Arbitrary duty cycles (CAD-based)
  - Customized missing tooth locations
- Cam
  - Arbitrary pattern output
  - Arbitrary duty cycles (CAD-based)
  - Single or multi-pulse per 720-CAD
  - Custom widths (CAD-based)
  - Optically Isolated
  - Available for inputs and outputs

Each device in SwRI’s BOT series may be configured to meet specific customer needs. The potential for these devices far exceeds their generic configurations.