# WHEEL-END DISCONNECT

## Battery Electric Vehicles

**Description:**

A 2-position wheel-end disconnect to reduce drivetrain losses and **increase vehicle range up to 40km**. The device can be activated at cruising speeds when only 2WD is required to mechanically disconnect the e-motor and axle shaft from the wheel hub. The wheel-end disconnect has zero drag in 2WD. Additionally, the device can be actuated quickly to provide 4WD during a loss of traction or to restore full vehicle torque on-demand.

The disconnect contains a bi-stable actuator with on-board position sensing to verify spline engagement and disengagement using PWM or SENT protocol. Optional on-board speed sensing is available to facilitate half-shaft to wheel hub speed synchronization. The actuator is only powered momentarily during actuation, with zero current draw while holding in 2WD or 4WD.

*Change of State:* Current is supplied to device, the actuator changes states and translates clutch ring to couple or de-couple the half-shaft and wheel hub. The position sensor verifies the engagement or disengagement of the system, and then the power is turned off while the system holds in the desired state.

***Technical Data:**

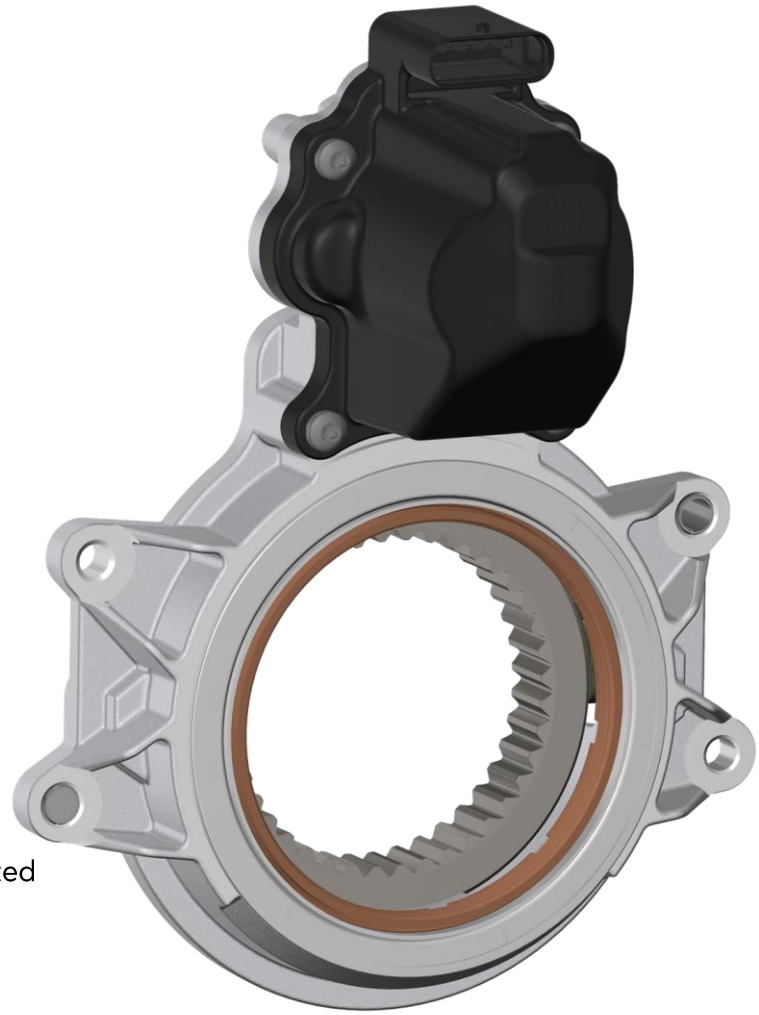
**Nominal Torque Rating:** Up to >3000Nm
**Resistance:** 0.93±0.05Ω @ 20°C
**Inductance:** 6mH
**Operating Current:** (+) or (-) 7A, 0A hold
**Preferred PWM Frequency:** 1000Hz Min
**Response Time :** <50ms
**Sealing:** Knuckle PIP Face Seal
Half-Shaft Dynamic Seal
**Lubrication:** Grease

**Operating Limits:**

**Voltage:** 10.5-16VDC
**Ambient Temp:** -20°C to 125°C

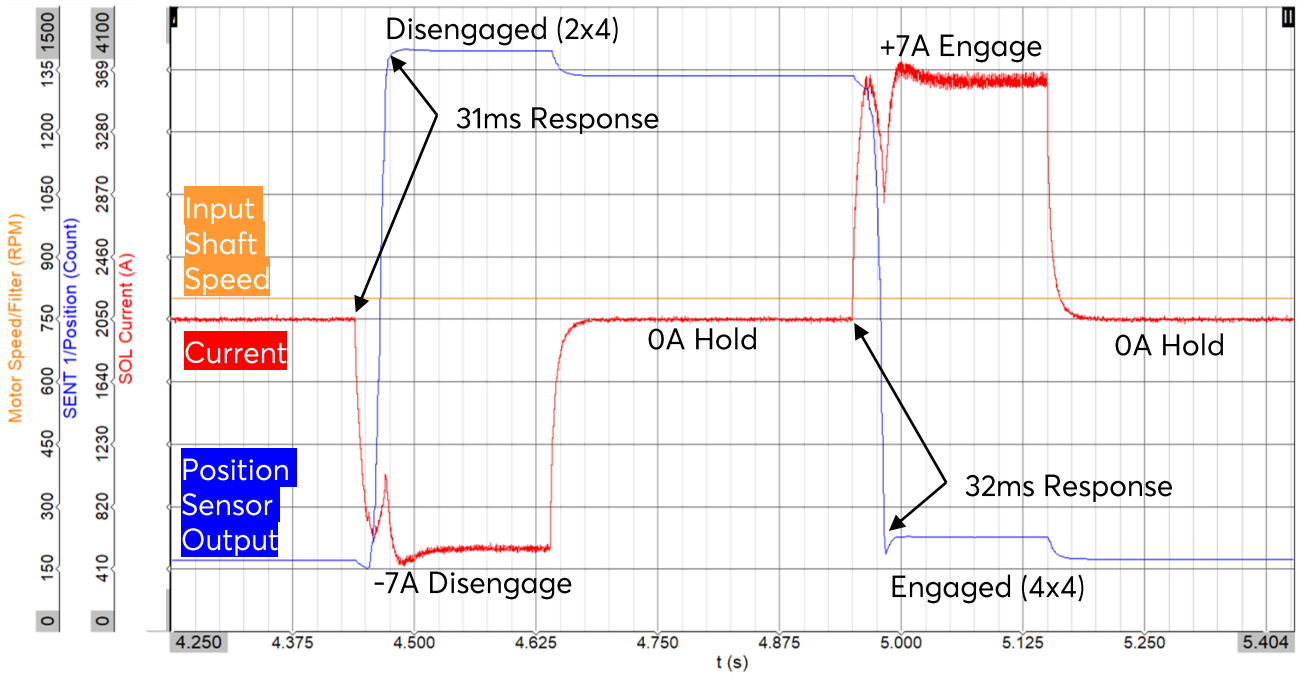
**Survivable Limits:**

**Ambient Temp:** -40°C to 125°C



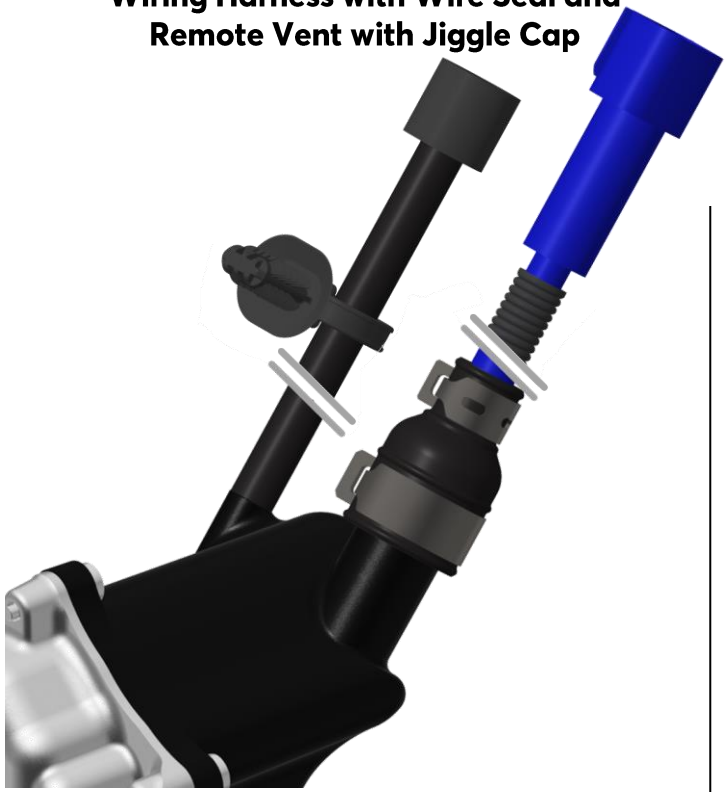
*Contact Husco Engineering for customized performance, sensing, mounting, or connectors.

# Performance Curve




# Common Variants

**Wiring Harness with Wire Seal and Remote Vent with Jiggle Cap**



**Molded Connector with ePTFE Vent on Housing**