



CUSTOMER STORIES

# WHEN SAFETY IS THE TOP PRIORITY, EV MANUFACTURERS ARE LOOKING FOR ASIL-RATED COMPONENTS AND SOLUTIONS



| Severity  | Exposure      | Controllability |             |                                |
|---|---------------|-----------------|-------------|--------------------------------|
|   |               | C1 (Simple)     | C2 (Normal) | C3 (Difficult, Uncontrollable) |
| <b>S1</b><br>LIGHT AND MODERATE INJURIES                              | E1 (Very low) | QM              | QM          | QM                             |
|   | E2 (Low)      | QM              | QM          | QM                             |
|   | E3 (Medium)   | QM              | QM          | A                              |
|   | E4 (High)     | QM              | A           | B                              |
| <b>S2</b><br>SEVERE AND LIFE THREATENING INJURIES - SURVIVAL PROBABLE | E1 (Very low) | QM              | QM          | QM                             |
|   | E2 (Low)      | QM              | QM          | A                              |
|   | E3 (Medium)   | QM              | A           | B                              |
|   | E4 (High)     | A               | B           | C                              |
| <b>S3</b><br>LIFE THREATENING INJURIES - FATAL INJURIES               | E1 (Very low) | QM              | QM          | A                              |
|   | E2 (Low)      | QM              | A           | B                              |
|   | E3 (Medium)   | A               | B           | C                              |
|   | E4 (High)     | B               | C           | D                              |

**QM (Quality Management)**  
Development supported by established Quality Management is sufficient.

**A** lowest ASIL  
Low risk reduction necessary  
**B**  
**C**  
**D** highest ASIL  
High risk reduction necessary

## Our ASIL-C rated IVT sensors are proving a preferred functional safety solution for school busses and other heavy-duty, last-mile vehicles in BDUs/PDUs

### CHALLENGE

New provisions in CSA D250 recognize adaptations for EV school busses, and the goal of electrifying the U.S. school bus fleet completely by 2030 is part of President Biden’s “Build Back Better” plan. Manufacturers looking to secure contracts with youth transportation fleets need to demonstrate their EVs comply with today’s most stringent safety standards. With the introduction of ASIL (Automotive Safety Integrity Levels) standards, OEMs have an objective method for evaluating functional safety for their components and systems. Defined under ISO 26262, three factors are used: severity of consequences should a hazard take place; exposure - the probability of occurrence for the given hazard; and controllability on the part of the driver. ASIL ratings range from A (lowest) to D (highest).

### SOLUTION

Our IVT series of programmable sensors are a perfect fit for these safety-prioritized applications. They are the only sensors of this type currently carrying the ASIL-C rating. The IVT-3.0 all-in-one sensor (current/voltage/temperature) has made it a particularly attractive option for engineers and designers looking for flexibility, cost advantages, and faster time-to-market from a proven, ready-made sensor.

### APPLICATION

Many leading OEMs have already incorporated IVT-3.0 into their latest BDUs and EDUs within their Battery Management Systems (BMS), charging stations, and EV designs, including: School Buses (Type-A), Last-mile EVs, Production EVs (autos and trucks), heavy equipment for mining, construction, and agriculture.