



Together with the Pantograph Condition Monitor System, ART have developed a complimentary system - the Pantograph Collision Detection System.

The PCDS (Pantograph Collision Detection system) monitors the interface between the overhead centenary and the pantograph and provides real time warnings for unusual contacts or strikes.

In regular use a Pantograph may be struck by an overhead support component that is loose or/defective and hanging low. Identification of the loose or/defective part can be time consuming and difficult, causing unnecessary network downtime. When an abnormal impact is detected the location and time of the impact is sent via SMS to the operator.

The development of this solution has been supported in part by NSW Trade & Investment through the Innovate NSW program. Further, ART have achieved this in conjunction with the assistance of Sydney Trains to produce an easy to install and maintain detection system.

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Mechanical:

- 3805-1000 Impact Processing Module
435 x 300 x 75mm (excluding mounting brackets), 8.2kg
- 3805-1001 Power Supply Module
435 x 300 x 75mm (excluding mounting brackets), 8.5kg
- 3805-1011 Impact Detector Modules
50 x 50 x 20mm (excluding cables and mounting brackets), > 100grams

Technical Information:

General

- System data available includes: Vehicle ID, Speed, Location, Time/Date, Status, Impact levels
- System adjustable parameters include: Impact Thresholds, System sleep/wake parameters, Admin and Status User phone numbers for SMS data

Shock and Vibration

- IEC61373, Category 1, Class B.

GPS

- Concurrent Global Navigation Satellite System (GNSS).
- Can receive and track multiple GNSS systems
- Receiver Types GPS, QZSS, GLONASS, BeiDou, Galileo (when available)

Wireless Technology

- Technology; 3G UMTS/HSDPA/HSUPA
- UMTS/HSPA Bands I, II, IV, V, VI, VIII
- Standard size SIM Card required in the Impact Processing Module

Impact Detectors

- High performance 3-axis linear accelerometer
- 16bit resolution
- 10,000 g shock survivability

System Power

- 2 x in built solar panels
- High performance LiFePO4 batteries
- Maintains power for 7 days without solar input (assumes 12hr/day active)

On-Board Memory

- 64Mbit Flash memory

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