Transmission Dynamics®

+/-16g SmartBug®

OVERVIEW

Transmission Dynamics® developed the SmartBug® in-service data logging device that monitors and automatically reports on the performance of a customers assets, based on vibration (+/-16g measurement range accelerometer, 3-axis) and temperature data captured.

SmartBugs® (Figure 1) are wireless and battery powered, and will communicate locally with the RSRU (Receiver and Signal Relay Unit [Figure 2]), which transfers the acquired data to the Cloud. The data is made available to the client on the secure GDN® (Global Data Network), where it can be viewed and manipulated remotely by the client.

The SmartBug® monitors the operating parameters of various rail assets, detecting features such as:

- Temperature
- Gear tooth quality
- Gear pitting and scuffing
- Gear tooth damage or loss
- Wheel slides
- Wheel quality
- Track quality
- Cardan shaft failure
- Engine misfiring
- Bent or eccentric shafts
- Bearing seizures
- Bearing characteristic frequencies
- Damper failure
- Wheel flats

SMARTBUG® (figure 1)

Communication	2.4 GHz license-free band
Power	Internal 3V lithium manganese dioxide battery (up to 3 years battery life)
Size	Ø28.0 mm OD x 15.0 mm (Ø36.2 mm OD x 17.8 mm inc. carrier)
Weight	0.02 kg (0.03 inc. carrier)
Temperature Range	-40°C to +85°C (including battery)
Warranty	12 months

TESTING STANDARDS

EMC and EMI compatibility	BS:EN 50121-3-2:2016 BS:EN 301489-1 V2.2.3 BS EN 301489-17 V3.2.4
Shock and Vibration	BS:EN 61373:2010

SmartBugs® are installed using a structural adhesive which allows for quick, non-intrusive installations, and hence, eliminating need for any structural modifications. Battery life is dependant on the configuration and software setup. Each device is configured with a pre-determined limit which if exceeded, will trigger and send an alarm to the client. SmartBugs® can be supplied with aluminium carriers, designed to allow quick replacement of the devices (Figure 2).

Figure 1

Figure 2

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