Track Geometry Tester Solution

Inertial measurement unit: IMU800

The railway track directly carries the wheels and guides the train to run. The geometric shape of the track must closely match the geometry of the wheelset of the locomotive.

Theoretical calculations and experimental studies at home and abroad have shown that the irregularity of the track is the main cause of vibration on the line of the locomotive. On the other hand, the track irregularity is the main source of the wheel-rail force. On the other hand, the short-wave surface of the track surface is not smooth. The resulting intense wheel-rail interaction may also cause rail and axle breakage, resulting in a vicious derailment accident.

It can be seen that strict control of the geometric shape of the railway track is of great significance for ensuring the safety, stability and comfort of the train operation, and is also a distinctive feature of the railway track structure which is different from other engineering structures.

Product real shot

Product Highlights:

1.Ultra-small size, 178 mm × 155.5 mm × 135 mm
2.Lightweight 3.8kg
3.Low power consumption 15W
4.High precision, bias stability (1σ) 0.03~0.05 °/h
5.Wide measuring range, ±180 deg / s
6.High reliability, long life
7.Gyro signal pulse, RS422 dual output
8.Reserved table installation position +28V power supply

Wuxi Bewis Sensing Technology LLC Tel：0510-85737158 URL：www.bwsensing.com.cn

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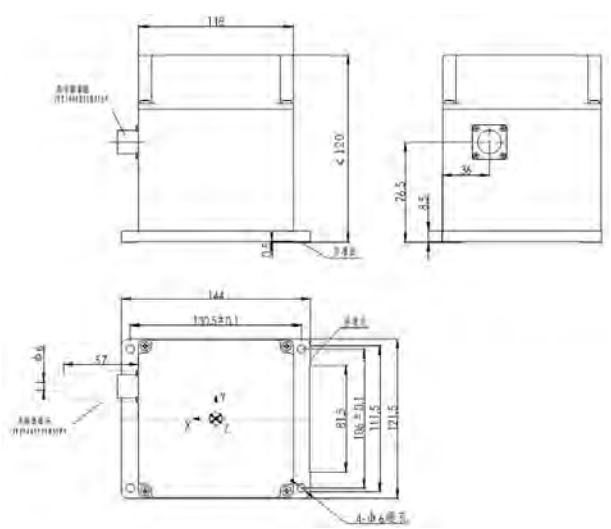
Performance:

Gyro performance parameters	Measuring range	±180deg/s
	Offset stability（1σ）	0.03~0.05°/h
	Offset repeatability（1σ）	0.03~0.05°/h
	Random walk coefficient	≤0.05°/√h
	Scale factor nonlinearity	≤100ppm
	Scale factor repeatability（1σ）	≤100ppm
Accelerometer performance parameters	Measuring range	±30g
	Offset stability（1σ）	50μg
	Offset repeatability（1σ）	50μg
	Scale factor repeatability（1σ）	≤100ppm
Environmental parameters	Operating temperature	-40 ~ +65℃
	Storage temperature	-45 ~ +70℃
	Vibration	10 ~ 2000Hz,0.04g²/Hz
	Shock	80g,8ms
Physical parameter	Size（mm）	≤178×155.5×135
	Weight（g）	3800
	Connector	JY27496E11B35SN

Product Size:



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Applications:

The track geometry detection system is an important technical means to detect track diseases, guide line maintenance and maintenance, and ensure the safety of train operation. Bewis Sensing Technology LLC has jointly launched a track geometry state detector solution, high precision and low drift tactical level inertial measurement unit. Under the unique combination algorithm, very high dynamic measurement accuracy can be achieved, and the auxiliary correction information can be provided by GPS or total station to accurately detect the geometric state of the track.