涡流栅位移传感器绝对定位可靠性算法

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摘　要：

为了提高涡流栅位移传感器绝对定位的可靠性，利用编码码道信号之间互补关系，提出了一种新型的编码码道码字识别算法，即三类码字识别算法，该算法可将编码码道归一化误差限提高到±0.1。在此基础上，对归一化误差曲线经过有选择性的最小二乘法拟合，可将归一化误差进一步降低至±0.05。实验证明该方法可以满足码字识别算法的要求，采用该技术的涡流栅位移传感器确保了绝对定位的可靠性，提高了传感器的稳定性。

关键词：位移传感器；识别算法；误差修正；涡流栅

Algorithm on absolute position reliability about grating eddy-current position sensor

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Abstract:

In order to improve the reliability of the absolute-position about grating eddy-current position sensor, three types code word recognition algorithm is proposed and increases the error limit to ±0.1, through using the complementary relationship of the signal. After using the least square method on the normalized error curve, the errors can be decreased to ±0.05. The experiments proof that the method completely meet requirements of the code word recognition algorithm. And the grating eddy-current position sensor, adopting the technology, could ensure not only the reliability of the absolute-position, but also the stability of the sensor.

Keywords: position sensor; recognition algorithm; error correction; grating eddy-current

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