MONITORING TRANSFER CAR POSITION

Industry: Metal / steel industry

Application type: Position measurement / Monitoring

Brief description

Pic 1: Mounted Target plate on transfer car

A global steel production facility was experiencing production downtime because the large transfer cars (200 feet in length) used to transport massive, red hot steel plates were overshooting their shuttle positions or colliding with the barrier stops at the end of a rail guided transfer line. The production stoppages were caused by the malfunction of floor mounted micro-switches, which were triggered by the transfer cars and positioned at 6 points along a 55-60 foot track.

To replace the malfunctioning micro switch system, a non-contact distance laser measurement system was designed, installed, and implemented by a local integrator. The replacement system consisted of the following two Dimetix laser distance sensors enclosed in NEMA 4X rated protective housing. Corresponding reflective target plates attached to the transfer car and a display/controller consisting of a panel mounted serial display and analog transmitter. The protective enclosures housing the lasers also included a vortex compressed air cooling system to continuously monitor temperature and cool the inside of the enclosure. The same compressed air stream was passed over a boron silicate glass viewing window with a unique perforated silicon gasket that directs a stream of clean, cool air over both sides of the viewing window. The continuous flow of air over the viewing window maintains the temperature inside and outside the housing and also provides an air purge to prevent dust accumulation.

Pic 2: Transfer car

Customers advantages

- Non-contact visible eye-safe laser measurement
- Laser sensors can be placed far apart to permit space for material transport and foot traffic
- Plenty of measurement range
- Measurements can be acquired by a PLC or PC
- Maintenance free application– no moving parts to wear or string cables to break
- Economical, rugged and compact package

Products used

DLS-C series / FLS-C series

These two distance measuring devices measure absolute distances up to 500 meters on reflective foil without contact. Due to most innovative laser technology the sensors have a unique accuracy of ±1.5 mm. A further advantage of these types is the quick determination of the positions of moving objects.

These series are an optical distance measuring device. They measure, maintenance-free, distances up to 65m on natural surfaces. They determine positions of objects that are difficult to access or may have very high surface temperatures. Just as easily, they accurately measure distances in hazardous environments.

Those two are designed to be suitable for both, heavy industrial and outdoor applications. They are constructed of a solid metal case and provides class IP65 environmental protection. **They represent a cost efficient solution even at extreme environment temperatures as high as +50° C**. Furthermore, various features make it flexible for multiple applications in numerous industries such as automotive, paper, metal and textile.

Specification

- Measuring range 0.05 up to 500m
- Accuracy ±1.5 / ± 1.0 mm
- Repeatability ±0.4 – ±1.5 mm
- Extended operating temperature
- Solid metal case IP65
- Supply voltage

For new projects we recommend our **D-Series**. Further information can be found here.

For more information please contact us on application@dimetix.com