TURCK

Your Global Automation Partner

Tips For Welding Best Practices Guide

A Global Leader in Industrial Automation

Turck's sensors, connectivity, and fieldbus technology products are built to be the best. As one of the most **prominent** sensor manufacturers **in the world**, we even back our sensors with a **lifetime warranty**. Turck works by bringing **rugged engineering** solutions to your industrial automation applications.

85,000+
SOLUTIONS

50+
YEARS OF INNOVATION

2,000+
EXPERIENCED SALES REPRESENTATIVES

Pioneer in non-contact **sensing** technology

Developed innovative **connectivity** solutions in response to our customers' needs

Recognized the need for advanced **I/O solutions** in harsh duty environments

SUPPORT & DEDICATED SERVICE

EXTENSIVE WARRANTY

4,800+
APPLICATION EXPERTS

RESPOND and SOLVE over **1,200** inquiries per day

Strategically placed manufacturing facilities in the **USA** with **30** GLOBAL SUBSIDIARIES

GLOBAL BUT LOCAL...

60 representations worldwide

Content

Introduction

This pamphlet augments Turck's Welding Solutions catalog, and will help you identify where to apply Turck products and how they can solve application challenges. It will also explain installation and maintenance best practices that will help extend the life of our products and improve your productivity, ultimately reducing costs.

There is no single solution for many of the problems encountered in welding applications. Turck has tirelessly continued to develop new and better solutions for a wide variety of problems where sensors and cordsets are damaged and destroyed.

For additional Turck support, we offer on-site customer training by our Automotive Specialists to review and help solve specific application challenges. Turck also provides a welding audit service, where an Automotive Specialist completes a thorough review of a weld cell and makes recommendations to solve the issues encountered.

armor guard

Tool sleeves for physical protection

armor guard +

Stainless steel front face sensors

stone face

Protection from MIG/ TIG weld slag

weld guard

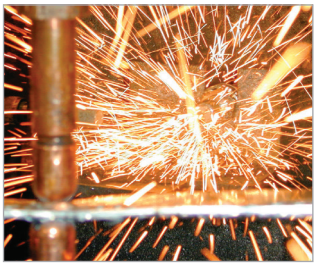
Protection from resistance weld splatter

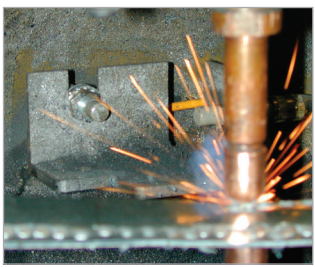
weld life

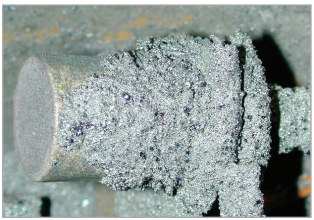
Cable protection from welding applications

Resistance Welding

Resistance or spot welding causes considerable damage to proximity sensors that results in excess downtime, lost production and additional costs. The weld splatter generated from a spot welder is dispersed in the form of very small, hot particles at a very high velocity. These particles embed themselves into all the surfaces surrounding the weld tips. This is very destructive to proximity sensors, as the particles build up on the sensor face and barrel causing the sensor to fail. Once the sensor fails, it either requires the removal of the weld slag or, in most cases, the prox switch must be replaced. Turck Weldguard ® sensors use proprietary material on the sensors' housing that extends the life of the sensors, resulting in a considerable time and cost savings.

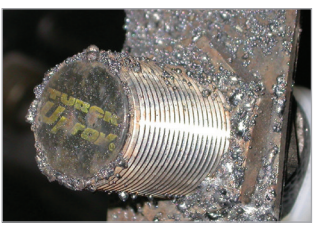




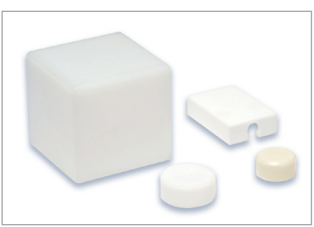


Weldguard® for improved weld splatter resistance and protection

Rubber or Weldlife® cable for improved weld splatter protection



Stoneface® for improved weld splatter resistance and protection and abrasion

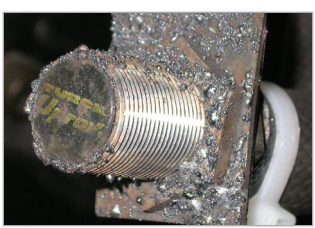


PTFE/Ceramic/Delrin caps for sensor face protection

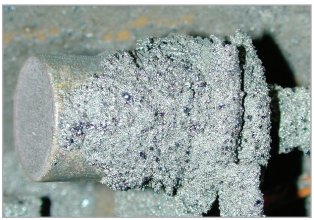
MIG/TIG Welding

MIG/TIG welding, like resistance welding, causes considerable damage to proximity sensors. MIG/TIG welding results in hot molten slag that adheres to the sensor face and barrel resulting in pre-mature sensor failure. Removing slag from a sensors' face is very difficult and sensors are more often replaced in this instance. Turck Stoneface® material protects the sensor face and helps extend the life of the sensor, resulting in time and cost savings.

Typical damage from MIG welding



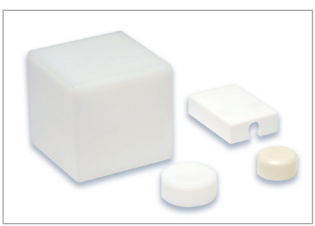
Primary solution:
Stoneface® for improved protection against weld slag



Secondary solution:
Weldguard® for improved weld slag protection

Viton or Silicon or PTFE sleeves for cable protection

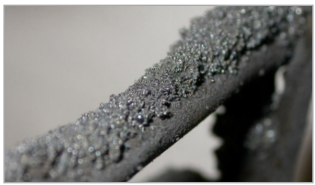
Rubber or Weldlife® cable for improved weld splatter protection



PTFE/Ceramic/Delrin caps for sensor face protection

Physical Protection

Both sensors and cables are also damaged by physically being hit by fixtures or parts in the welding process. The types of damage are varied and there is no one good solution, so Turck continually strives to develop new ways to help protect the sensors and cables from physical damage, including the incorporation of special materials used in manufacturing. Accessories used to physically protect the devices are also available.



Armorguard® sleeves for improved physical protection with Weldguard ®

Stainless steel front face for improved physical protection

Rubber or Weldlife® cable for improved weld splatter protection

PTFE sleeving

Viton or silicon sleeves for cable protection

Uprox+® for recessability

Maintenance Ideas and Do/Don't Advice

In many welding applications, applying the appropriate sensor or cable will drastically extend their service life. However, there are also some 'tricks of the trade' that can be used to help extend their service life even further.

Do: Use dry ice to clean sensors as this will not affect the performance of the sensors

Do: Use any of a variety of accessories to protect the sensor and cordset. See next section for details.

Don't: Use potted in cables when cable damage is a problem as this requires a lot of extra work to replace the damaged sensor.

Do: Use a connectorized sensor and cordset for easier replacement of the sensor.

Don't: Clean Weldguard® or Stoneface® sensors with wire brushes, screw drivers or scrapers as this will damage the front face and reduce sensor life by giving weld slag an easier surface to adhere.

Do: Clean Weldguard and Stoneface sensors with a cloth, glove or plastic scraper as this will not damage the sensor and will easily clean the weld splatter off of the sensor.

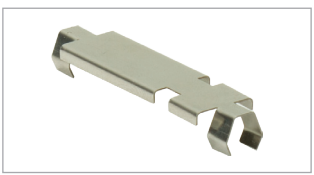
Do: Use a sacrificial cordset for easier replacement of damaged cable near the sensor. See next section for details.

Installation Accessories and Ideas

Many times, just a simple accessory can help eliminate damage or help extend the life of a sensor or cable. These accessories also aid in setup and installation.

Sacrificial cordsets are great for areas where the first foot or so of cable gets damaged. Use a 0.3-0.5 m patch cordset so you don't have to replace the complete cordset and save time.

Use protective caps (PTFE, Ceramic, Delrin) when necessary and when Stoneface® or Weldguard® sensors are not available.



Protect cylinder sensors from slag.

Use right angle cordsets to allow for sharp corners and relieve stress on the cable at the sensor.

Use cordsets with LEDs in the connector (either end) when sensor LEDs are not visible due to mounting.

Use Armorguard® sleeves on barrel sensors and Q08 flat packs or full stainless steel sensors for protection from physical damage.

Use cushion mount (CM series) or quick mount (QM) series for additional ease of mounting or protection.

For easier replacement of sensors, use the quick mount (QM series) for M8, M12, M18 and M30 sensors. PTFE coated versions also available.

Notes

Notes

30 subsidiaries and over
60 representations worldwide!

Printed in USA

B1902 B 04/25

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