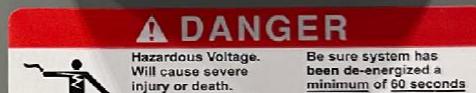


Customer Success Story: Main & Company

Market segment
Aerospace, Military, Precision Machining, Medical



Eaton's advanced surge protective devices guard precision machinery

Location:

Jackson, Michigan

Segment:

Precision Aerospace Machining

Challenge:

Prevent damage to Main & Company's precision manufacturing equipment during frequent power issues.

Solution:

Eaton Power Xpert SPD

Results:

Since the installation of the Eaton solution, Main & Company has not had a single failure of a fine electronics related to power issues.

"The confidence and peace of mind that this protection provides in reducing downtime and eliminating damage to our fine electronics due to these external power issues is well worth the investment."

Gerald Brown, Main & Company President/CEO

Background

Since its founding in 1952, Main & Company, Inc. of Jackson, Michigan, has been contract precision machining prototype and production parts to very close tolerances and performing turnkey completion of precision parts for the aerospace, medical and other highly technical industries. The company's capabilities are a perfect match for the exacting tolerances and complexity required for intricately detailed components.

Challenge: Prevent damage to fine electronics

In 2021, a gravel pit supplying a construction contractor was expanded, increasing the demand on the common utility substation that feeds Main & Company. This caused an increase in the frequency of power issues, resulting in tens of thousands of dollars in damage to their machines, fine electronics such as vector drives, circuit boards and drive amplifiers. This also resulted in scrapped material/parts and production delays.

Josh Freysinger, a Tool & Die/Design Engineer Journeyman at Main & Company, reached out to the utility for assistance. Their lead power quality engineer recommended Mr. Freysinger contact RC Merchant & Company, power quality specialists and a manufacturers' representative for Eaton.

EATON

Powering Business Worldwide



Main & Company headquarters in Jackson, Michigan

Solution: Eaton's heavy-duty Power Xpert SPDs with web monitoring

Together, Mr. Freysinger and RC Merchant & Co. assessed the vulnerabilities at Main & Company and implemented a system shield approach for protection of equipment. A heavy-duty Power Xpert® SPD (Surge Protective Device) was installed on the 1200A 480V main distribution panel, and smaller compact SP1 Surge Protection Devices were installed on individual equipment. These were coupled with phase loss monitor/ relays installed on over 35 precision manufacturing machines and support equipment, including roof-top HVAC units and a 120VAC single-phase generated power system.

The PX SPD provides web monitoring of power events to verify incidents as they happen, while protecting critical equipment from large voltage surges generated external to the facility. SP1 SPDs installed on each machine reduce any remaining surge to zero and protect against any surges and electrical noise generated within the facility.

The Power Xpert SPD offers advanced monitoring display and communication capabilities to track and record surge events and protection status on a facility's power system. The Power Xpert SPD categorizes surge events on each phase as low, medium, and high, according to IEEE standard C62.41.2. These surge events are stored in an event log with time and date stamps. It uses Eaton Power Xpert architecture for secure Ethernet communications over Modbus TCP/IP or BACnet/IP for remote monitoring capabilities.



The sidemounted series SPD offers the most advanced surge protection for industrial and commercial applications, available in NEMA 1, NEMA 4 or NEMA 4X stainless steel enclosures.

Results: Not a single fine electronics failure

Since the installation of this system shield protection scheme, Main & Company has had several major power events that previously would have caused extensive equipment damage. They have not currently experienced a single fine electronics failure to date. Unfortunately, some unprotected LED lighting and overhead A/C units did experience some damage. They are currently improving ground-bonding in these areas and installing additional SP1 SPDs and phase loss monitor/relays to complete the plant protection.

“This main electrical service protection shield approach, coupled with internal surge control, has enabled us to utilize our state-of-the-art equipment and highly skilled workforce more efficiently, with less repair downtime and significantly less machine electrical part failure, while providing more confidence that our equipment is safe from future major electrical event damage.”

Josh Freysinger, Tool & Die/Design Engineer Journeyman, Main & Company

With the Eaton solution in place, Main & Company is now able to...

- Use their precision equipment more efficiently
- Use their highly skilled workforce effectively
- Reduce repair costs/downtime
- Reduce scrapped materials/parts and production delays

Learn more:
Eaton.com/Power-Xpert-SPD

Eaton
 1000 Eaton Boulevard
 Cleveland, OH 44122
 United States
 Eaton.com

© 2023 Eaton
 All Rights Reserved
 Printed in USA
 Publication No. CS158007EN / 23-01-104
 May 2023



Note: Features and specifications listed in this document are subject to change without notice and represent the maximum capabilities of the software and products with all options installed. Although every attempt has been made to ensure the accuracy of information contained within, Eaton makes no representation about the completeness, correctness or accuracy and assumes no responsibility for any errors or omissions. Features and functionality may vary depending on selected options.

Follow us on social media to get the latest product and support information.



Eaton is a registered trademark.

All other trademarks are property of their respective owners.