Understanding complete machine safety systems

ABB is known for machine safety solutions that are competitively priced and capable of producing a reduction in risk. It is important that machine safety systems are user-friendly and easy to install, with safety devices that meet the requirements of the material handling and material processing industries.

The idea that all safety devices are the same is a fallacy. ABB offers products and systems designed to operate in the harshest material handling environments. Our systems will stand up to extreme hot or cold temperatures and environmental conditions that often shorten the life of expensive equipment.

Decades of machine safety systems expertise

Our goal for nearly three decades has been the protection of the manufacturing workforce — and it has made ABB a leader in the machine safety industry. We offer complete machine safety solutions that will help protect valuable staff and meet standards and regulations relevant to your business. We can be instrumental in helping you meet the unique challenges encountered in material handling with electrical/mechanical solutions, services and systems that deliver value.
Challenge and Commitment

The need for machine safety has become one of the most important concerns for Canadian manufacturers. The necessity to protect employees from injury and the fact that there are standards that must be met are realities that can no longer be ignored.

In an industry where the demands on repeatability, system versatility, operational reliability and productivity are high, it is especially important that machine safety is integrated in a natural way. Whether at the planning stage or retrofit to an existing process, we can show that safety measures do not affect productivity in a negative way but contribute to improving it.

Overcoming industry issues

Material handling systems require a high sustainability level from their electrical/mechanical systems to avoid costly system shutdowns and potentially delayed shipment scheduling. ABB offers products and systems designed to operate in the harshest material handling environments. Our systems will stand up to extreme hot or cold temperatures and environmental conditions that often shorten the life of expensive equipment.

Decades of machine safety systems expertise

Our goal for nearly three decades has been the protection of the manufacturing workforce – and it has made ABB a leader in the machine safety industry. We offer complete safety systems that integrate seamlessly with material handling systems, making them an integral part of our customers’ operations. We have a reputation for helping companies see the true implications across their entire material handling safety environment, solve problems and improve their bottom line.

Understanding complete machine safety systems

Many of today’s material handling facilities don’t understand the true value of a safety system until they experience an accident or incident. By integrating safety systems into the planning process, we can ensure that safety measures do not affect productivity or create problems for material handling systems.

The idea that safety devices are the same and can be purchased as commodity products for the lowest price is a common misconception. In reality, different safety devices perform different functions and are designed for different applications. The type of safety device you need is determined by the specific application, and the cost is directly related to the safety device’s design and function.

Machine Safety – Productivity – Profitability

Productivity and machine safety are not contradictory terms. ABB knows that machine safety solutions that are properly designed and executed will increase productivity and profitability. By engineering safety systems in a smart way, the mode of operation will not need to be changed to meet the requirements that safety sets. Instead, this creates a system that is operational-friendly and takes into account the business and its productivity objectives.

Our Value Commitment

ABB is leading the way in material handling facilities and manufacturer’s requirements by offering machine safety systems that exceed common safety standards. Our commitment is helping you to meet the unique challenges of your material safety environment with solutions and systems that deliver value.
The costs associated with downtime in a material handling facility can be very high. If power is lost during sorting, scheduling or picking of material the entire line can be affected. These stoppages can range from several minutes to several hours resulting in expensive manual intervention and possible missed deadlines. Due to the high cost of downtime, most material handling facilities prefer to use higher performing materials and products to extend equipment life. To minimize downtime preventive maintenance is performed at specific intervals instead of waiting for equipment failure.

Corrosion the enemy of electrical systems costs of improper selection included replacement value, plus labour and down time. Corrosive agents such as acidic food products, moisture and harsh cleaning chemicals are everyday realities in food and beverage processing. This makes the use of corrosion-resistant materials the key to extending the life and reliability of your electrical system.

ABB offers products in aluminum, stainless steel, non-metallic, PVC or PVC-coated materials as a solution to your corrosion issues.

- **Safety PLC’s**, Relays and Controllers reduce the number of needed components in the panel thus reducing possible points of failure
- **Safety Bumpers** to allow continued process in the presence of operators
- **Safety Locks** keep doors securely locked until the process is over and the machine has come to a controlled stop
- **E-Stops** with visual indicators for quick diagnostics and recovery

- **IP69K Safety door sensors** for extreme wash-down requirements on hazardous machinery
- **IP69K Stainless steel solenoid locking switches** to prevent doors from being opened on process sensitive equipment
- **IP69K Stainless steel E-Stop buttons**
- **IP69K Wash-down tube system with fittings for air purge** offers protection for ABB Safety Light Curtains when operators must be in close proximity to the hazard

The increased globalization of the Material Handling Industry continuously introduces new lower cost technologies, automation and material sourcing. This growing competitive landscape coupled with rising material costs, inflation and overcapacity affect operations and profitability for North American based companies. To compete in this challenging market, a global approach must be utilized when investigating product selection. Products and systems need global approvals to the various safety standards as well as tight control over manufacturing costs. In addition, products and solution sets need to be supported through a global footprint thus maintaining crucial uptime.

- **Globally approved safety products** with manufacturing locations around the world
- **Enabling devices** allow for safe bypassing of safety devices during non-hazardous portions of the machine cycle
- **Safety System support** in over 45 countries
- **Presence and membership** to global standards organizations
- **Quick delivery of product through thousands of global channel partners**

Flexible automation and timely process changes allows the Material Handling & Logistics market to continue to grow and service our increasing consumer demands. To meet the market trends of more broken and mixed case ordering coupled with looming worker shortages, a modular and adaptable approach needs to be implemented into the growing automation designs. Safety system zoning and modularity allows for quick integration of transfers, sorters, palletizers, wrappers, etc. into a singular system. This integrated system maintains the ability for segmentation as well as individual diagnostics. A complete line does not have to halt due to a local stoppage if the system is designed correctly.

- **Gateways** allow for all safety information to be quickly communicated to the operator station HMI
- **Long range dual head safety emergency rope pull switches** with LED indication
- **Safety port blocks** allow for quick connect of modular safety systems into a singular solution
- **Safety mats** allow for sections of the work area to be protected during the machine process. If an operator steps on a Safety Mat a stop signal is generated

Continuous operation and sustainability Safety system zoning and modularity

Global perspective and support

Corrosion/harsh environment and liquid ingress protection

<table>
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<tr>
<th>Solenoid switches</th>
<th>Vital controllers</th>
<th>Eden sensor</th>
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**Continuous operation and sustainability**

- **ABB offers you the following solutions**

  - Safety PLC’s, Safety of Controls modules reduce the number of needed components in the field thus reducing overall maintenance and downtime.

  - Safety Bumpers to allow continued process in the presence of operators.

  - Safety Locks keep doors securely locked until the process is over and the machine has come to a controlled stop.

  - E-Stops with visual indicators for quick diagnostics and recovery.

**Safety system zoning and modularity**

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  - IP69K Safety door sensors for extreme wash-down requirements on hazardous machinery.

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**Continuous Operation and Sustainability**

**Safety System Zoning and Modularity**

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Machine safeguarding solutions for the material handling industries

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Machine Safety – Productivity – Profitability

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