Products designed for hazardous environments

Class I Division 2 Products

- Meets UL Class I Division 2 hazardous area standards
- Designed to mitigate risk and increase safety
- Optimum performance in hazardous locations

Omron Delivers a Wide Range of Class I Div 2 Products from a Single Source

A predominant safety concern in industrial environments is the occurrence of fires and explosions. No other aspect of industrial safety receives more attention in the form of codes, standards, technical papers, and engineering design. There are organizations such as UL and OSHA that have established systems that classify locations which exhibit potentially dangerous conditions to the degree of hazard presented. For more than 80 years Omron has been providing proven control solutions for automation applications in hazardous environments. Our Class I Div 2 products make it easy for you to design and deliver safe machines that help your customers increase productivity and maximize availability for hazardous environments.

Omron brings expertise in applications involving combustible gases such as oil and gas processing and drilling, mining, hazardous waste disposal and chemical and petrochemical among other industries. Omron helps industrial locations handle the challenges of hazardous environments with a diverse portfolio of products and solutions. Our portfolio includes industrial controllers and components that can be used in a variety of industries.

Make Omron your single source for hazardous environment controls.

Industry/Applications

- Natural Gas Compression and Processing
- Oil Refining and Processing
- Chemical and Petrochemical Processing
- Mining
- Spray Paint Booths
- Hazardous Waste Disposal

Benefits

- Expertise to ensure you integrate the right controllers and components for your needs
- Products that meet North American UL Class I Division 2 safety standards so it is safe to specify for a machine design
- Local and global technical support at your disposal for no additional cost

CHEMICAL AND PETROCHEMICAL

HAZARDOUS WASTE DISPOSAL

OIL/GAS DRILLING

MINING

Controllers

NJ SERIES

CLICK HERE
to learn more

- Expandable I/O using local CJ expansion cards
- Sysmac Studio for flexible, scalable programming
- Embedded OPC/UA and SQL versions
- Simultaneously utilize EtherCAT and EtherNet/IP
- Operating temperature: 0 to 55°C

NX SERIES

CLICK HERE
to learn more

- Compact controller, expandable I/O using local NX expansion cards
- Sysmac Studio for flexible, scalable programming
- Embedded OPC/UA and SQL versions
- Simultaneously utilize EtherCAT and EtherNet/IP
- Operating temperature: 0 to 55°C

CS1/CS1D

CLICK HERE
to learn more

- High speed processing with on-rack redundancy
- Extensive choice of special function units for motion and temperature control
- IEC 61131-3 Structured Text programming, extensive function block libraries
- Up to 96 I/O points per unit - input, output or mixed

CJ2H/CJ2M

CLICK HERE
to learn more

- Versions available with EtherNet/IP Data Link function
- Immediate refresh of I/O ensures real-time processing
- CJ2H: High program capacity of up to 400K steps
- CJ2M: Wide range of program capacities from 5K steps to 60K steps

CP1/CP2E

CLICK HERE
to learn more

- Supports ladder, structured text and function block programming
- Increased function with option boards and expansion modules
- Communication protocols to meet IIoT needs
- Programmable using CX-One Lite
- Operating temperature: -20 to 60 °C

Remote I/O

NX I/O

CLICK HERE
to learn more

- Integrates with EtherNet/IP and EtherCAT
- Industry-leading small footprint
- Modular design allows for flexible configuration
- Digital, Analog, Position, Safety ALL-IN-ONE

GX REMOTE I/O

CLICK HERE
to learn more

- EtherCAT Remote I/O Modules
- Compact size
- IP20 housing
- Expandable digital I/Os
- Detachable I/O terminal blocks
- Selectable high-speed input response time

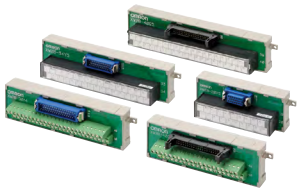
DRT2 DEVICENET

CLICK HERE
to learn more

- Compact size IP20 housing
- Expandable digital I/Os
- Built-in diagnostics and preventive maintenance functions
- Detachable I/O terminal blocks
- Analog I/O with data pre-processing and alarm functions
- Smart Features: Calendar, Counter, Volt Meter, Stopwatch & Calculator

XW2B TERMINAL BLOCK

CLICK HERE
to learn more



- Consolidates wiring for 2- and 4-axis motion control modules through a dedicated cable
- Convenient terminal labels included to identify wiring connections at a glance
- Easily mounts to DIN track or via screws
- Space-saving design and easy-to-wire M3 screw terminals

ERT-1 HIGH DENSITY ETHERNET-IP

CLICK HERE
to learn more

- Cage clamp connections for vibration resistant, high density wiring
- Short circuit protection and indication
- Removable terminal block for easy wiring

CRT1

CLICK HERE
to learn more

- Compact size with IP20 housing
- Expandable digital I/O with detachable terminal blocks
- Easy network wiring with IDC connections
- Built-in diagnostics and preventive maintenance functions
- Analogue I/O with data pre-processing and alarm functions

Industrial PCs and HMIs

NYB BOX PC

CLICK HERE
to learn more

- Selection of Intel Processors
- Options: RS-232C or extra DVI-D for dual monitor
- DVI -3x RJ45 Gigabit Ethernet ports -2x USB2.0, 2x USB3.0
- HDD or SSD (MLC and long-life SLC types) + Second drive option
- I/O connection prepared for UPS connection -Power supply: 24VDC non-isolated

NYM MONITOR

CLICK HERE
to learn more

- 12.1", 15.4" & 18.5" Options
- Multi-touch, using projected capacity technology
- False touch detection (palm rejection, water and cleaning)
- Glove operation
- Models available with NY Monitor Link interface for connectivity up to 100 m between Box PC and Monitor

NYP PANEL PC

CLICK HERE
to learn more

- 12.1", 15.4" & 18.5" Options
- Selection of Intel Processors
- Multi-touch, using projected capacitive technology
- Glove operation
- DVI -3x RJ45 Gigabit Ethernet ports -2x USB2.0, 2x USB3.0
- HDD or SSD (MLC and long-life SLC types) + Second drive optional

NA HMI

CLICK HERE
to learn more

- Complete functionality scalable with widescreen across 7", 9", 12", 15" range
- Available in black or silver
- High resolution (1280 × 800 pixel for 12" and 15", 800 × 480 pixel for 7" and 9")
- Ideal for Sysmac PLC Applications

NS HMI

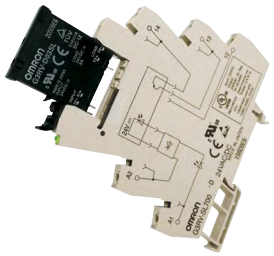
CLICK HERE
to learn more

- 5.7", 8.4", 10.4", 12.1" & 15" QVGA LCD with LED backlight
- Ladder Monitor and Programming Console for OMRON PLCs
- Scalable projects between all model sizes
- Large Memory size (60MB)
- CX-Designer software included as part of CX-One & CX-One Lite
- Ideal for CJ PLC Applications

Components

G3RV SOLID STATE RELAY

CLICK HERE
to learn more



- LED indicator built in relay and socket
- Push-in terminals and accessories for easy wiring
- Large contact area with non-bendable pins

MY4H RELAY

CLICK HERE
to learn more

- Fully hermetically sealed for hazardous locations
- Cadmium-free contacts for environment-friendly use
- Models with bifurcated contact also available
- Conforms to UL508 and CSA 22.2
- 4PDT contact type
- 3A rated load

Programmable Safety Controllers

NE1A

CLICK HERE
to learn more

- Compact Safety Controller
- The NE1A-SCPU01-V1 provides 16 built-in safety inputs and 8 built-in safety outputs
- The NE1A-SCPU02 provides 40 built-in safety inputs and 8 built-in safety outputs
- Reduced wiring with safety networks. Connect up to 32 Safety Terminals
- Monitor the safety system from Standard Controllers across the network
- ISO13849-1 (PLe) and IEC 61508 SIL3 certification

NX-SL

CLICK HERE
to learn more

- CIP Safety on EtherNet/IP Is Supported
- The Standard Unit of NX-series Available
- Excellent Connectability with OMRON Safety I/O Devices
- Support for the IEC 61131-3 Programming Environment
- Complete Advanced Validation
- Checking Safety Programs and Safety Parameters
- Up to 254 connections (NX-SL5700)
- Up to 32 NX Units per Communication Control Unit

What is Class I Division 2?

A Class I Division 2 is a location: (1) In which volatile flammable gases, flammable liquid-produced vapors, or combustible liquid-produced vapors are handled, processed, or used, but in which the liquids, vapors, or gases will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown of such containers or systems or in case of abnormal operation of equipment, or (2) In which ignitable concentrations of flammable gases, flammable liquid-produced vapors, or combustible liquid-produced vapors are normally prevented by positive mechanical ventilation, and which might become hazardous through failure or abnormal operation of the ventilating equipment.

Class I Division 2 Classification

Class I Division 2 refers to the ANSI/ISA 12.12.01 standard. This standard was previously UL1604 until UL recommended the newer ANSI/ISA standard be used and that all hazardous location products be certified under this standard by July 2012.

This standard applies only to equipment, circuits, and components designed specifically for use in Class I and II, Division 2 and Class III, Divisions 1 and 2 hazardous locations as defined by the National Electrical Code (NEC) ASI/NFPA 70.

Within the ANSI/ISA 12.12.01 standard. There are two types of hazardous conditions are 3 different classes and 2 divisions within each class. For a Class I rating the 2 divisions are Division 1 - normal conditions and Division 2 - abnormal conditions.

The CSA hazardous location certification is C22.2 No. 213-M1987-Non-Incendive Electrical Equipment for Use in Class I Division 2 Hazardous Locations.

What is a hazardous location?

According to the NEC and the Canadian Electrical Code (CEC) a hazardous location is defined as areas "where fire or explosion hazards may exist due to flammable gasses or vapors, flammable liquids, combustible dust, or ignitable fibers or flyings." Specifically Class I Division 2 refers to only flammable gasses or vapors.

Furthermore, hazardous locations are locations where electrical equipment could be installed and might present a condition which could become explosive if the right elements for an ignition would be present.

Hazardous material is expected to be found within closed containers and/or systems and would be present only if an accidental rupture, breakage or an unusual faulty operation would occur, leading the situation to be abnormal, the Division 2 rating.

An example of a normal condition would be where hazardous material would be present during normal plant operations, which coincides with the Division 1 rating.

This hazardous material could ignite through arcs and sparks, high temperature, and electrical equipment failure.

This means that any product with a Class I Division 2 rating must contain an explosion within, provide a way for the burning gases to escape after the flames are quenched through a flame path.

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Authorized Distributor:

Controllers and I/O
Machine Automation Controllers (MAC) | Motion Controllers
Programmable Logic Controllers (PLC) | Temperature Controllers | Remote I/O

Robotics
Industrial Robots | Mobile Robots

Operator Interfaces
Human Machine Interface (HMI)

Motion and Drives
Machine Automation Controllers (MAC) | Motion Controllers | Servo Systems
Frequency Inverters

Vision, Measurement and Identification
Vision Sensors and Systems | Measurement Sensors | Auto Identification Systems

Sensing
Photoelectric Sensors | Fiber-Optic Sensors | Proximity Sensors
Rotary Encoders | Ultrasonic Sensors

Safety
Safety Light Curtains | Safety Laser Scanners | Programmable Safety Systems
Safety Mats and Edges | Safety Door Switches | Emergency Stop Devices
Safety Switches and Operator Controls | Safety Monitoring/Force-guided Relays

Control Components
Power Supplies | Timers | Counters | Programmable Relays
Digital Panel Meters | Monitoring Products

Switches and Relays
Limit Switches | Pushbutton Switches | Electromechanical Relays
Solid State Relays

Software
Programming and Configuration | Runtime

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