

ATEX / IECEx
INSTRUCTION GUIDE
concerning the use of M340 and M580
Industrial Programmable Controllers
for applications in potentially
explosive atmosphere
(zones 2/22)



INSTRUCTION GUIDE

concerning the use of M340 and M580 Industrial Programmable Controllers for applications in potentially explosive atmosphere (Zones 2/22)

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Type examination certificate: INERIS 14ATEX3025X
IECEX Certificate of Conformity: IECEX INE14.0070X

SAFETY INFORMATION

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a Danger safety label indicates that an electrical hazard exists, which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates an imminently hazardous situation, which, if not avoided, **will result** in death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation, which, if not avoided, **can result** in death, serious injury, or equipment damage.

CAUTION

CAUTION indicates a potentially hazardous situation, which, if not avoided, **can result** in injury or equipment damage.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

SCOPE

The present document applies when the modules bear the Ex marking and provides important information for M340-M580 automation system used in Ex zones 2 and 22.

It is supplied in English only with ATEX and IECEx certified power supply modules BMXCPS3020H, BMXCPS4022H, and BMXCPS4022S.

It is also downloadable from Schneider Electric website www.se.com.

If any translation is needed, you can contact your local Schneider Electric support.

CERTIFIED MODULES

Certified modules are listed on the ATEX attestation (INERIS 14ATEX3025X), and IECEx certificate (IECEx INE14.0070X).

RELEVANT STANDARDS

These modules have been manufactured in accordance with:

- Standard EN 60079-0 (2012) +A11 (2013) and IEC 60079-0 Ed7.0 (2017): Explosive atmospheres - Part 0: Equipment - General requirements.
- Standard EN 60079-7 (2015) +A1 (2018) and IEC 60079-7 Ed5.0 (2015) +A1 (2017): Explosive atmospheres - Part 7: Equipment protection by increased safety "e".
- Standard EN 60079-15 (2010) and IEC 60079-15 Ed4.0 (2010): Explosive atmospheres - Part 15: Equipment protection by type of protection "n".

 **DANGER**


EXPLOSIVE POTENTIAL

These devices must be installed, used and maintained in accordance with:

- Standard IEC 60079-14 Ed5.0: Explosive atmospheres - Part 14: Electrical installations design, selection and erection.
- Standard IEC 60079-17 Ed5.0: Inspection and maintenance of electrical installations in hazardous areas.
- Edicts, by-laws, laws, directives, circulars, standards, regulations and any other document relating to where the apparatus is installed.

Failure to follow these instructions will result in death or serious injury.

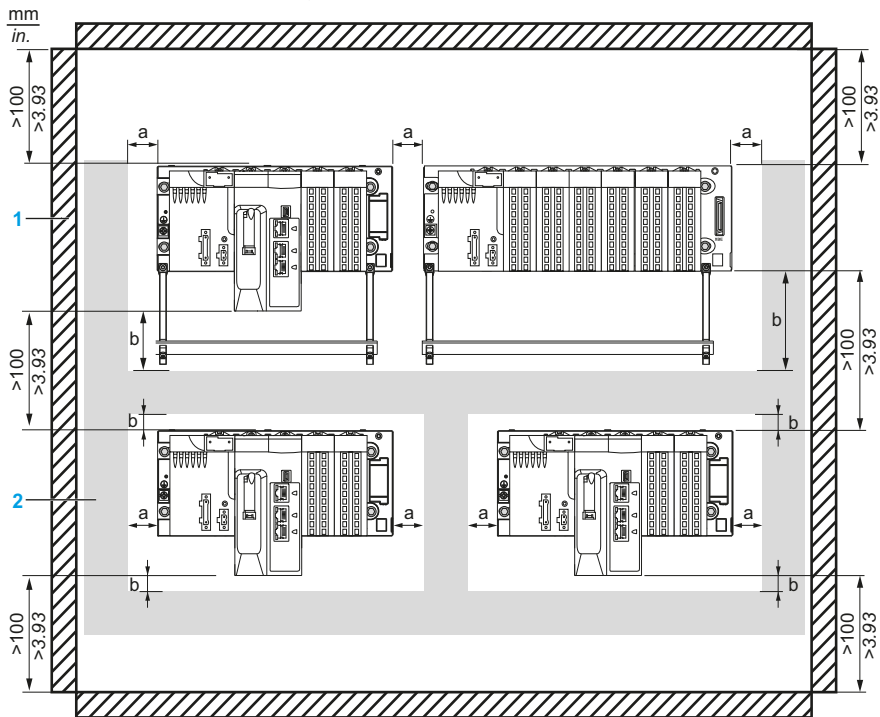
GAS APPLICATION

M340 and M580 modules installed in zone 2 hazardous areas bear the  marking.

The ATEX and IECEx certified modules are equipments suitable for hazardous areas zone 2 if the special conditions for safe use are fulfilled. See chapter "Special conditions for safe use".

For optimal cooling and air circulation, an adequate clearance must be respected between Modicon X80 I/O platform and surrounding objects (such as wire ducts, inside surface of the enclosure, machinery). The modules will present an overheating of maximum 43 K.

This illustration shows the rules of a typical installation in a cabinet with ducts:



Legend:

1 Installation or casing

2 Wiring duct or tray

a Side clearance: > 40 mm (1.57 in.)

b Top and bottom clearance with surrounding objects: > 20 mm (0.79 in.)

ATEX and IECEx certified modules			Suitable for hazardous area
Equipment category According to European ATEX directive 2014/34/EU	Equipment protection level According to international standards IEC 60079-x	Type of protection for M340-M580 modules	
3G	Gc	Increased safety 'ec' Sealed devices 'nC'	Zone 2 (Gas)

When certified modules are selected for Ex areas, make sure with the marking on modules that they are compatible with the conditions permitted for the Ex area at the site where it is being used.

DUST APPLICATION

M340 and M580 modules can be used in zone 22 if they are installed in an enclosure. See chapter "Special conditions for safe use".

INSTALLATION, START-UP, OPERATION AND MAINTENANCE

Before any use of certified M340 and M580 modules in zones 2 and 22 hazardous areas:

- Follow the recommendations in the Hardware Reference Guides.
- Install the modules according to Schneider Electric specifications and use them within their specified ratings.
- Properly connect the power supply module and the backplane to ground.
- Wire the field wiring terminal blocks according to the recommendations in the Hardware Reference Guides.
- Only use external fuses that are non-sparking, non-rewirable and non-indicating cartridge types.

SPECIAL CONDITIONS FOR SAFE USE

DANGER

EXPLOSIVE POTENTIAL

- Do not disconnect any connectors (USB connectors, Sub-D connectors, terminal 2 points and 5 points of power supply module, field wiring terminal blocks BMXFTB**** and BMXFCA****, memory card) when energized.
- Securely lock any external interface connected to the modules.
- Install the modules in an enclosure Category 3G or EPL Gc insuring a minimal ingress protection IP54 for use in zone 2.
The intended environment shall be not more than pollution degree 2 as defined in IEC 60664-1.
- Install the modules in an enclosure Category 3D or EPL Dc insuring a minimal ingress protection IP6X for use in zone 22.
- Do not open the enclosure when energized.
- Make sure that the maximum service temperature in the enclosure never exceeds 60 °C or 70 °C (check marking on modules).

Failure to follow these instructions will result in death or serious injury.

INTERCONNECTION BETWEEN ZONES

M340 and M580 offers are automation platform based on modules which are connected with field instruments or human machine interfaces.

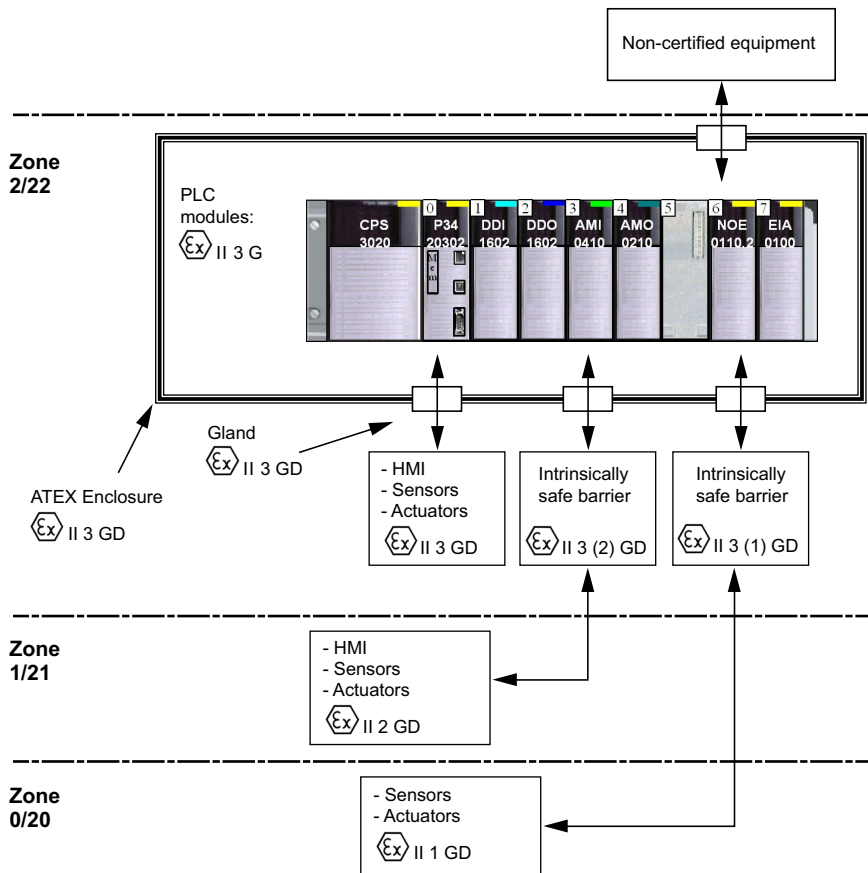
ATEX and IECEx certified modules are connected via cables that can be interfaced outside the protective enclosure.

You have to refer to the manufacturer's enclosure installation guide for choosing your cable connection (conduit adapter, gland requirements...).

Certified modules intended to be connected in hazardous areas zone 1/21 or 0/20 must be used with external intrinsically safe barriers.

ARCHITECTURE EXAMPLE

Out of Atex Zone or Safe Zone



MARKING ON MODULES

ATEX and IECEx markings, applied to the M340 and M580 modules, are as follows:

For modules with operating temperature range: -25 °C to +70 °C

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IECEX INE14.0070X

Ex ec nC IIC T4 Gc

II 3 G

INERIS 14ATEX3025X

Tamb.: -25°C to +70°C

WARNING – Do not disconnect while circuit is live unless area is known to be non-hazardous

For modules with operating temperature range: 0 °C to +60 °C

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IECEX INE14.0070X

Ex ec nC IIC T4 Gc

II 3 G

INERIS 14ATEX3025X

Tamb.: 0°C to +60°C

WARNING – Do not disconnect while circuit is live unless area is known to be non-hazardous

For modules with operating temperature range: -25 °C to +60 °C

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IECEX INE14.0070X

Ex ec nC IIC T4 Gc

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INERIS 14ATEX3025X

Tamb.: -25°C to +60°C

WARNING – Do not disconnect while circuit is live unless area is known to be non-hazardous