EXDIRECT

A PRECISION DIGITAL CORPORATION BRAND

233 SOUTH ST, HOPKINTON, MA 01748 USA
(774) 233-7061 sales@exdirect.com

EX SERIES ENCLOSURE - REFERENCE MANUAL

IECEx

DISCLAIMER

The information contained in this document is subject to change without notice. ExDirect makes no representations or warranties with respect to the contents hereof; and specifically disclaims any implied warranties of merchantability or fitness for a particular purpose.

This product is not recommended for life support applications or applications where malfunctioning could result in personal injury or property loss. Anyone using this product for such applications does so at his/her own risk. ExDirect shall not be held liable for damages resulting from such improper use.

WARNING
Cancer and Reproductive Harm - www.P65Warnings.ca.gov

SAFETY INFORMATION

Read complete instructions prior to installation.

Installation and service should be performed only by trained service personnel.

Verify that the operating atmosphere of the installation is consistent with the appropriate hazardous locations certifications.

Substitution of components may impair hazardous location safety.

Service requiring replacement of components must be performed at the factory.

CAUTION

Risk of electric shock or personal injury.

Failure to follow installation guidelines could result in death or serious injury. Make sure only qualified personnel perform the installation.

Never remove the cover in explosive environments when the circuit is live.

Cover must be fully engaged to meet flameproof/explosion-proof requirements.

The user/installer shall implement precautions to prevent the build-up of electrostatic charge, e.g. locate the equipment where a charge-generating mechanism (such as wind-blown dust or high-pressure steam) is unlikely to be present and only clean with a damp cloth.

Use suitably certified and dimensioned cable entry devices and/or plugs.

Flameproof joints are not intended to be repaired.

The EX Series of enclosures have no serviceable parts.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

WARNINGS (AVERTISSEMENTS)

OPEN CIRCUIT BEFORE REMOVING COVER (OUVRIR LE CIRCUIT AVANT D'ENLEVER LE COUVERCLE)

POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS (RISQUE POTENTIEL DE CHARGEMENT PAR ÉLECTROSTATIQUE - VOIR LES INSTRUCTIONS)

SEAL REQUIRED WITHIN 18 INCHES (JOINT EXIGE DANS LES 18 POUCES)

APPLICATION

The EX Series of component enclosures form the basis for certification of a unit or protection system for use in hazardous areas other than Zone 0 or Zone 20.

MODIFICATION

Flameproof joints are not intended to be repaired. Please contact the factory.

The EX Series enclosures shall have no holes, whether for mechanical or electrical purpose and whether blind or clear, drilled through the enclosure, with the exception of the internal wall of the EX550.

User Modification Instructions: 1/2-14 NPT or 3/4-14 NPT openings, with a minimum of 5 full threads, may be drilled and tapped through the 10.6 mm (0.4 in) thick internal wall for installation of a suitably certified bushing, in order to maintain the isolation between chambers.

INSTALLATION

Flameproof joints are not intended to be repaired. Please contact the factory.

Unpacking
Remove the enclosure from its box. Inspect the packaging and contents for damage. Report damages, if any, to the carrier.

Mounting
All enclosures (except for the EX550) has a slotted mounting flange that may be used for pipe mounting or wall mounting. Alternatively, the enclosure may be supported by the conduit using the conduit holes.

Aluminum models must not be installed in locations where they may be subjected to conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conductive surfaces.

Earthing / Grounding
When the enclosure is properly mounted, a earthing / grounding conductor, 10 AWG or 6.6 sq mm maximum, must be installed to the external ground terminal's green M4x0.7 pan head screw.

Locking Set Screw
The locking set screw is intended to prevent the removal of the enclosure's cover in a explosive environment without the use of a tool. Using a M2 hex wrench, turn the screw clockwise until the screw contacts the enclosure's base. Turn the screw an additional 1/4 to 1/2 turn to secure the cover.

Conduits
Conduit sealing fittings (entry closure devices), approved for the specific hazardous location where the enclosure is used, must be installed within 18" (450 mm) of the enclosure.

Suitable thread sealing compound (non-setting, non-insulating, non-corrosive, not solvent based, suitable for the ambient rating) must be used at the NPT conduit entries to achieve the IPx8 rating while maintaining the Ex protection concept.

A minimum of five (5) full threads engagement is required for all NPT device connections/ threaded openings. A minimum of seven (7) full threads engagement is required for all Metric device connections/ threaded openings.

All unused openings must be closed with suitably certified and dimensioned cable entry devices and/or plugs.

MAINTENANCE

If needed, clean only with a damp cloth.

If needed, corrosion inhibiting grease such as Petrolatum or soap thickened mineral oil (shall be of a type that does not harden because of ageing, does not contain an evaporating solvent, and does not cause corrosion of the joint surfaces) can be added to the base to lid threads.

LIMITED WARRANTY

Precision Digital Corporation (ExDirect) warrants these products against defects in material or workmanship for a period of one year from the date of shipment from the factory. Precision Digital's liability under this limited warranty shall not exceed the purchase value, repair, or replacement of the defective unit. See Warranty Information and Terms & Conditions on www.predig.com for complete details.

REFERENCES

The ISO 60417, Symbol 5019 is located adjacent to the equipment ground (protective conductors) terminal which is identified by a green screw. The internal grounding terminal shall be used for the equipment grounding connection and the external terminal is for a supplementary bonding connection where local codes or authorities permit or require such connection.

Identification of thread form and type for each conduit entry appears adjacent to the conduit entry.

Year of Construction: This information is contained within the serial number with the first four digits representing the year and month in the YYMM format.

The EXxxx-AL models are constructed of ASTM A413 LM6 die-cast aluminum (copper-free) with an enamel coating and have a minimum wall thickness of 6.35 mm, except for the EX200 which have a minimum wall thickness of 5.9 mm.

The EXxxx-SS models are constructed of ASTM A743 CF8M investment-cast 316 Stainless Steel and have a minimum wall thickness of 3.2 mm.

The lid to base gasket is a Fluoroelastomer gasket.

The lid's window (if equipped) is constructed of Borosilicate glass.

Series Dimensions

Model Series	Outside Dimensions (W x H x D)
EX200	4.3" x 4.27" x 3.66" (109 x 108 x 93 mm)
EX500	5.25" x 5.65" x 4.8" (133 x 144 x 122 mm)
EX550	5.25" x 6.0" x 6.67" (133 x 152 x 170 mm)
EX700	6.42" x 7.97" x 8.45" (163 x 202 x 214 mm)

Agency Reference Pressure (max):

Model Series	ATEX/IECEx Reference Pressure (max)	CSA Reference Pressure (max)
EX200	142 PSI	245 PSI
EX500	162 PSI	215 PSI
EX550	165 PSI	245 PSI
EX700	156 PSI	379 PSI

Agency Free Internal Volume and Weight:

Model	Free Internal Volume	Weight
EX200-AL-S	263.18 ccm (16.06 cu in)	0.95 kg (2.1 lbs)
EX200-AL-W	228.44 ccm (13.94 cu in)	1.04 kg (2.3 lbs)
EX200-SS-S	357.24 ccm (21.80 cu in)	2.13 kg (4.7 lbs)
EX200-SS-W	298.25 ccm (18.20 cu in)	2.27 kg (5.0 lbs)
EX500-AL-S	811.82 ccm (49.54 cu in)	1.95 kg (4.3 lbs)
EX500-AL-W	695.63 ccm (42.45 cu in)	2.18 kg (4.8 lbs)
EX500-SS-S	1002.89 ccm (61.20 cu in)	3.95 kg (8.7 lbs)
EX500-SS-W	887.69 ccm (54.17 cu in)	4.08 kg (9.0 lbs)
EX550-AL-S	533.56 ccm (32.56 cu in) 618.12 ccm (37.72 cu in)	2.63 kg (5.8 lbs)
EX550-AL-W	417.38 ccm (25.47 cu in) 618.12 ccm (37.72 cu in)	2.90 kg (6.4 lbs)
EX700-AL-S	2004.63 ccm (122.33 cu in)	5.76 kg (12.7 lbs)
EX700-AL-W	1860.26 ccm (113.52 cu in)	5.99 kg (13.2 lbs)
EX700-SS-S	2335.48 ccm (142.52 cu in)	9.34 kg (20.6 lbs)
EX700-SS-W	2219.96 ccm (135.47 cu in)	9.98 kg (22.0 lbs)

EX Series of empty enclosures for use in hazardous locations.

HAZARDOUS AREA APPROVALS

II 2 G D
Ex db IIC Gb
Ex tb IIIC Db
IP66/IP68
Ta = -55°C to +85°C
ATEX Certificate: Sira 19ATEX1252U
IECEx Certificate: IECEx SIR 19.0075U
Notified Body: 2813

IECEx

ATEX / IECEx Schedule of Limitations:

1.Refer to drawing DW2427 for flameproof joint dimensions.
2.All entry closure devices shall be suitably certified as "Ex d", "Ex t" and "IP66/68" as applicable. Suitable thread sealing compound (non-setting, non-insulating, non-corrosive, not solvent based, suitable for the ambient rating) must be used at the NPT conduit entries to achieve the IPx8 rating while maintaining the Ex protection concept.
3.The EX Series enclosures are rated for use in an ambient and service temperature range of -55°C to +85°C. The non-metallic window cement has a COT of -55°C to +105°C. Ex Equipment utilizing the EX Series enclosures may require de-rating of the maximum ambient temperature, in order to maintain the service temperature ratings of the Ex Component enclosure.
4."Ex t" only or dual "Ex d" and "Ex t" Ex Equipment utilizing the EX Series enclosures shall include the following or technically equivalent warning marking "WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS", and the following or technically equivalent Conditions of Certification / Specific Conditions of Use "Anodized or epoxy coated aluminium models must not be installed in locations where they may be subjected to conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conductive surfaces. Additionally, cleaning of the equipment should only be done with a damp cloth."
5."Ex d" Ex Equipment utilizing the EX Series enclosures shall have no holes, whether for mechanical or electrical purpose and whether blind or clear, drilled through the enclosure, with the exception of the following:
   a.EX550 User Modification Instructions: 1/2-14 NPT or 3/4-14 NPT openings, with a minimum of 5 full threads, may be drilled and tapped through the 10.6 mm (0.4 in) thick internal wall for installation of a suitably certified bushing, in order to maintain the isolation between chambers.
6."Ex d" Ex Equipment shall not utilize the EX Series enclosures to contain oil-filled circuit-breakers or contactors.
7."Ex d" Ex Equipment may utilize the following EX Series enclosures to contain internal components in any arrangement, provided that ≥ 40% of each cross-sectional area remains free to permit unimpeded gas flow. Separate relief areas may be aggregated provided that each area has a minimum dimension in any direction of 12.5 mm. Otherwise, additional Explosion Reference Pressure and even Overpressure Testing may be deemed necessary.

EX Series of empty enclosures for use in hazardous locations.

HAZARDOUS AREA APPROVALS

Class I, Division 1, Groups A, B, C and D
Class II, Division 1, Groups E, F and G
Class III
Class I, Zone 1, AEx db IIC Gb
Zone 21, AEx tb IIIC Db
Ex db IIC Gb
Ex tb IIIC Db
Type 4X, IP66/IP68
Ta = -55°C to +85°C
CSA Certificate: CSA 19.80011200U

CSA Conditions of Acceptability:

1.Refer to drawing DW2426 for flamepath joint dimensions.
2.All entry closure devices shall be suitably certified as “Class I, Division 1”, “Ex d”, “Class II, Division 1”, “Ex t”, “IP66” or “IP68” and/or “Type 4X” as applicable. Suitable thread sealing compound must be used at the NPT conduit entries to achieve the IPx8 rating.
3.The EX Series enclosures are rated for use in an ambient and service temperature range of -55°C to +85°C. The non-metallic window cement has a COT of -55°C to +105°C. Equipment utilizing the EX Series enclosures may require de-rating of the maximum ambient temperature, in order to maintain the service temperature ratings of the enclosure.
4.Anodized or epoxy coated aluminum models must not be installed in locations where they may be subjected to conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conductive surfaces. Additionally, cleaning of the equipment should only be done with a damp cloth.
5.“Class I, Division 1” and “Ex d” equipment utilizing the EX Series enclosures shall have no holes, whether for mechanical or electrical purpose and whether blind or clear, drilled through the enclosure, except for the following:
   a. EX550 User Modification Instructions: 1/2-14 NPT or 3/4-14 NPT openings, with a minimum of 5 full threads, may be drilled and tapped through the 10.6 mm (0.4 in) thick internal wall for installation of a suitably certified bushing, in order to maintain the isolation between chambers.
6.“Class I, Division 1” and “Ex d” equipment shall not utilize the EX Series enclosures to contain oilfilled circuit-breakers, contactors or arcing current-interrupting devices used in circuits with > 10,000 A rms available short-circuit current.
7.“Class I, Division 1” and “Ex d” equipment may utilize the following EX Series enclosures to contain internal components in any arrangement, provided that ≥ 40% of each cross-sectional area remains free to permit unimpeded gas flow. Separate relief areas may be aggregated provided that each area has a minimum dimension in any direction of 12.5 mm. Otherwise, additional Explosion Reference Pressure and even Overpressure Testing may be deemed necessary.

EX Series of empty enclosures for use in hazardous locations.

HAZARDOUS AREA APPROVALS

E518920

Class I, Division 1, Groups A, B, C and D
Class II, Division 1, Groups E, F and G
Class III
Class I, Zone 1, AEx db IIC Gb
Zone 21, AEx tb IIIC Db
Ex db IIC Gb
Ex tb IIIC Db
Type 4X, IP66/IP68
Ta = -55°C to +85°C
UL File: E518920
UL Classified as to explosion and fire hazards only.

UL Schedule Of Limitations:

1.Flameproof joints are not intended to be repaired.
2.“WARNING - Potential Electrostatic Charging Hazard – See Instructions.” Anodized or epoxy coated aluminum models must not be installed in locations where they may be subjected to conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conductive surfaces. Additionally, cleaning of the equipment should only be done with a damp cloth.
3.The EX Series enclosures are rated for use in an ambient and service temperature range of -55°C to +85°C. The non-metallic window cement has a COT of -55°C to +105°C and the o-ring located at the base of the threads of the enclosure has a COT -62°C to +232°C. Equipment utilizing the EX Series enclosures may require de-rating of the maximum ambient temperature, in order to maintain the service temperature ratings of the enclosure.
4.The content of the Ex Component enclosure equipment may be placed in any arrangement provided that an area of at least 40% of each cross-sectional area remains free to permit unimpeded gas flow and, therefore, unrestricted development of an explosion. Separate relief areas may be aggregated provided that each area has a minimum dimension in any direction of 12.5 mm.
5.Group IIC component enclosures shall not contain oil-filled circuit-breakers, contactors, or current-interrupting devices with arcing contacts that are intended to interrupt a circuit with an available short circuit current greater than 10,000 rms symmetrical amperes.
6.If the thread size and type of the metric entries are not marked on the product, the thread size and type information must be provided in the installation instructions.
7.The EX Series enclosures shall have no holes, whether for mechanical or electrical purpose and whether blind or clear, drilled through the enclosure, with the exception of the EX550, which can be modified as stated below.
   EX500 User Modification Instructions: 1/2-14 NPT or 3/4-14 NPT openings, with a minimum of 5 full threads, may be drilled and tapped through the 10.6 mm (0.4 in) thick internal wall for installation of a suitably certified bushing, in order to maintain the isolation between chambers.
8.All unused entries shall be closed with suitable rated devices or blanking elements.

© 2025 ExDirect. All rights reserved.

EXDIRECT

A PRECISION DIGITAL CORPORATION BRAND

EU & IECEx Attestation of Conformity

Issued in accordance with ISO/IEC 17050-1:2004.

We,

Precision Digital Corporation (ExDirect)
233 South Street
Hopkinton, MA 01748 USA

as the manufacturer, attest under our sole responsibility that the product(s),

EX200, EX500, EX550, and EX700 Series Enclosures

to which this attestation relates, conform to the relevant provisions of the IECEx, ATEX Directive 2014/34/EU, and RoHS Directive 2011/65/EU.

Product Markings

II 2 G D
Ex db IIC Gb
Ex tb IIIC Db
IP66/IP68
Tamb = -55°C to +85°C
Notified Body: 2813

Conformity has been demonstrated with reference to the following documentation:

ATEX EU Type Examination Certificate: Sira 19ATEX1252U

ATEX Notified Body for EU Type Examination Certificate: CSA Group Netherlands B.V. (Notified Body number 2813)
Utrechtseweg 310
6812 AR, Arnhem, Netherlands

ATEX Quality Assurance Notification No.: SIRA 10 ATEX M462

ATEX Notified Body for Quality Assurance: CSA Group Netherlands B.V. (Notified Body number 2813)
Utrechtseweg 310
6812 AR, Arnhem, Netherlands

IECEx Type Examination Certificate: IECEx SIR 19.0075U

IECEx Notified Body for IECEx Type Examination Certificate: CSA Group Netherlands B.V.
Utrechtseweg 310
6812 AR, Arnhem, Netherlands

IECEx Quality Assessment Report No.: GB/SIR/QAR10.0005/13

IECEx Notified Body for Quality Assessment: CSA Group Netherlands B.V.
Utrechtseweg 310
6812 AR, Arnhem, Netherlands

Compliance with the Essential Health & Safety Requirements has been assessed by reference to the following standards:

EN 60079-0:2018	IEC 60079-0:2017
EN 60079-1:2014	IEC 60079-1:2014
EN 60079-31:2014	IEC 60079-31:2013

The standards EN 60079-0:2018, EN 60079-31:2014 and IEC 60079-31:2013 are no longer harmonized. The requirements of these standards have been checked against the harmonized standards EN60079-0:2018+A11:2024, EN60079-31:2024 and IEC 60079-31:2022 and there were no major technical changes affecting the latest technical knowledge for the products listed above.

Signed for and on behalf of Precision Digital Corporation (ExDirect):

Name: Owen Peters
Company: Precision Digital Corporation (ExDirect)
Title: President
Date: January 1, 2026

Document No: EU & IECEx DoC EX Series {010126}