



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX EUT 23.0015X** Page 1 of 4 [Certificate history:](#)
Issue 0 (2024-02-13)

Status: **Current** Issue No: 1

Date of Issue: 2024-07-10

Applicant: **MASTERWATT S.r.l.**
Via Collegno 31
Pianezza (TO) 10044
Italy

Equipment: **Pressurized control panels**

Optional accessory:

Type of Protection: **flameproof enclosures, increased safety, non-electrical, intrinsic safety, encapsulation, nC, pressurized enclosures**

Marking: Ex db ec h ic mb nC pzc [pzc Gc] [ic Gc] IIB+H₂ T4 Gc
Ex db eb ec h ic mb nC pzc [pzc Gc] [ic Gc] IIC T4 Gc
-10°C ≤ Tamb ≤ +55°C

Approved for issue on behalf of the IECEx
Certification Body:

Dionisio Bucchieri

Position:

Head of IECEx CB

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
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Certificate issued by:

Eurofins Product Testing Italy S.r.l.
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Italy

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Manufacturer: **MASTERWATT S.r.l.**
Via Collegno 31
Pianezza (TO) 10044
Italy

Manufacturing locations: **MASTERWATT S.r.l.**
Via Collegno 31
Pianezza (TO) 10044
Italy

MASTERWATT S.r.l.
Via Novara, 8
Pianezza (TO) 10044
Italy

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-1:2014](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

[IEC 60079-15:2017](#) Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:5.0

[IEC 60079-18:2017](#) Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1

[IEC 60079-2:2014](#) Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure "p"
Edition:6

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

[ISO 80079-36:2016](#) Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic methods and requirements
Edition:1.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[IT/EUT/ExTR23.0015/01](#)

Quality Assessment Report:

[IT/EUT/QAR14.0002/11](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The five control panels models EXP1X600, EXP2X600A, EXP2X600B, EXP1X800, EXP2X800B are electrical equipment designed to control electrical heaters.

They are suitable to be used in an explosive area classified as Zone 2.

They are protected by means of type of protection Ex-p (pressurized enclosure) and have also, inside or externally, other devices which are protected by other types of protection. These devices can be equipment or components and are separately certified.

These equipment/components are in detail:

- An external Junction Box that hosts the equipment required to manage the cabinet when the pressurization is not present or not effective and which includes the interface with the remote client systems DCS/UCP/MCC
- A system which manages the purging and pressurisation functions (control unit, solenoid valve and exhaust valves)
- Push buttons, light lamps, push buttons, potentiometers and switch selectrors (certified as components)
- Vortex cooling systems

An anticondensation heater can be also present as option inside the control panel.

See the attachement for further details

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The cabinet is not provided with a breaker that removes the supply from the main power terminals when the pressurization fails. However the control system provides a free of voltage contact that opens when the pressurization or purging is off. The user is not allowed to provide power supply when this signal is not active (contact open).
- The dimensions of the joints of the flameproof equipment cannot be modified. Contact the manufacturer.
- The cover of the EJB5AX equipment is fixed by stainless steel screws having minimum yield stress: 450 N/mm² (typical grade A*-70).
- The inlet pressure of the vortex cooler shall be set at 5.5 bar.
- The cold fraction adjustment valve of the Mech Cabinet Cooler must not be altered and shall remain at 2.5 turns open.
- Regarding the 5500 purge control unit, the unit shall not have the membrane keypad exposed to direct UV light sources and direct sunlight. Example methods of protection include, but are not limited to, indoor applications away from UV sources and outdoor locations under shading. As part of regular inspections, if damage to or deterioration of the membrane keypad is detected, the unit is to be taken out of service for repair or replacement.
- Regarding the 5500 purge control unit, the device shall be installed in an area with a maximum pollution degree of 2, as defined in IEC 60664-1.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Addition of new models EXP1X800, EXP2X800B with the same electrical and thermal ratings,

Addition of Increased safety Auxiliary Junction box with type of protection db eb

Modification of gas group from IIB to IIB+H₂ for the models EXP1X600, EXP2X600A and EXP2X600B

Annex:

[Annex to CoC issue 1_1.pdf](#)

Annex to certificate: **IECEX EUT 23.0015X Issue N. 1**

Electrical Ratings

380÷690Vac; 50/60 Hz; 55,4 A (EXP1X600;EXP1X800), 48,5 A (EXP2X600A), 130,8 A (EXP2X600B;EXP2X800B);

Pneumatic ratings:

EXP1X600

PNEUMATIC DETAILS
MINIMUM PURGING FLOW RATE: 205 l/min
MINIMUM PURGING TIME: 30 min.
MINIMUM OVERPRESSURE: 1 mbar
MAXIMUM OVERPRESSURE: 15 mbar
MINIMUM AIR SUPPLY PRESSURE: 5,5 bar
MAXIMUM AIR SUPPLY PRESSURE: 7 bar
MAXIMUM LEAKAGE RATE: 80 l/min.

EXP1X800

PNEUMATIC DETAILS
MINIMUM PURGING FLOW RATE: 205 l/min
MINIMUM PURGING TIME: 40 min.
MINIMUM OVERPRESSURE: 1 mbar
MAXIMUM OVERPRESSURE: 15 mbar
MINIMUM AIR SUPPLY PRESSURE: 5,5 bar
MAXIMUM AIR SUPPLY PRESSURE: 7 bar
MAXIMUM LEAKAGE RATE: 80 l/min.

EXP2X600A-B

PNEUMATIC DETAILS
MINIMUM PURGING FLOW RATE: 205 l/min
MINIMUM PURGING TIME: 60 min.
MINIMUM OVERPRESSURE: 1 mbar
MAXIMUM OVERPRESSURE: 15 mbar
MINIMUM AIR SUPPLY PRESSURE: 5,5 bar
MAXIMUM AIR SUPPLY PRESSURE: 7 bar
MAXIMUM LEAKAGE RATE: 80 l/min.

EXP2X800B

PNEUMATIC DETAILS
MINIMUM PURGING FLOW RATE: 205 l/min
MINIMUM PURGING TIME: 75 min.
MINIMUM OVERPRESSURE: 1 mbar
MAXIMUM OVERPRESSURE: 15 mbar
MINIMUM AIR SUPPLY PRESSURE: 5,5 bar
MAXIMUM AIR SUPPLY PRESSURE: 7 bar
MAXIMUM LEAKAGE RATE: 80 l/min.

Due to certification limitation of vortex for all cabinet sizes the air supply pressure shall also not exceed 5,5 bar

Warning label

“Warning: remove power supply before opening control panel door in an explosive atmosphere”.

“Warning: Pressurized Cabinet”

Routine tests

Functional test in compliance to clause 17.1 of IEC 60079-2 Edition 6.0

Leakage test in compliance to clause 17.2 of IEC 60079-2 Edition 6.0; the leakage with vortex inactive shall not exceed 100 l/min

Table of certified equipment/components that are part of the pressurized cabinet

Equipment / component	Manufacturer	Model	Marking string (as relevant for the case)	Certificate
Enclosure Flameproof Auxiliary Junction box	AD Viganò S.r.l.	EJB	Ex db IIB T5 Gb or Ex db IIB+H2 T5 Gb Ex tb IIIC T100°C Db	IECEx INE 11.0006X

Increased Safety Auxiliary Junction Box	Technor Italsmea	EFXE-402720SB	Ex db eb IIC T4 Gb	IECEx FIDI 21.0015X
Cable glands	Cortem S.p.A.	ELFIT model NEVB	Ex db IIC Gb	IECEx IMQ 19.0003X
Potentiometer	R. STAHL Schaltgeräte GmbH	8602*3-*** * *** *** - - *** - -	Ex eb IIC Gb -20 °C ≤ Tserv ≤ +60 °C	IECEx PTB 13.0074U
Purging System Solenoid Valve	ROTEX AUTOMATION LIMITED	Electromagnets 30334	Ex db IIC T6...T3 Gb	IECEx CES 19.0010X
Vortex Cabinet Cooler	Meech Static Eliminators Limited	Vortex Cabinet Cooler	Ex h IIC T4 Gb Ta -10°C to +55 °C	IECEx BAS 16.0087X
Cable Glands	CMP Products Limited	Model PX2K-REX	Ex eb IIC Gb	IECEx CML 18.0182X
Cable Glands	Hawke International	Model: ICG/653/UNI V	Ex db IIC Gb	IECEx CML 18.0131X
Purge Control Unit	Pepperl+Fuchs SE	Type Z Purge System - Type 5500 Purge Control Unit and Type EPV 5500 Purge Control Vent Accessory Unit	Ex ic ec nC [ic Gc] [pzc Gc] IIC T4 Gc (-20°C ≤ Ta ≤ +60°C)	IECEx UL 14.0019X
Control Module	CZ Electric Co. Ltd	Series CZ0203	Ex db eb IIC Gb	IECEx CQM 11.0033U
Signal Lamp with Button Module	CZ Electric Co. Ltd	Series CZ0212	Ex db eb IIC Gb Ts: -40°C to +90°C (types CZ0212-....L) Ts: -55°C to +90°C (types CZ0212-....H)	IECEx CML 19.0054U
Switch Module	CZ Electric Co. Ltd	Series CZ0201	Ex db eb IIC Gb	IECEx CML 19.0053U
Signal Lamp Module	CZ Electric Co. Ltd	Series CZ0202	Ex db eb IIC Gb	IECEx CML 19.0052U
Cable Glands	BARTEC F.N. S.R.L.	Model PAPB	Ex db IIC Gb	IECEx INE 11.0017X