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 UL 25.0085X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 1	Issue 0 (2026-04-15)
Date of Issue:	2026-06-08		
Applicant:	**Peter Paul Electronics Co. Inc.** 480 John Downey Drive New Britain, CT 06050-1180 **United States of America**		
Equipment:	**Electric solenoid valves and solenoid operators, Model Series EA2 and EA5 Solenoid Valves and Model Series OEA2 and OEA5 Solenoid Operators.**		
Optional accessory:			
Type of Protection:	**Flameproof "db"**		
Marking:	Ex db IIB+H_2 T4 Gb See Specific Conditions of Use for Temperature Ranges		

Approved for issue on behalf of the IECEx Certification Body: **Lucy Frieders**

Position: **Staff Engineer**

Signature: (for printed version)

Date: (for printed version) 2026-06-08

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.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

UL Solutions (US)
333 Pfingsten Road
Northbrook IL 60062-2096
United States of America

IECEx Certificate of Conformity

Certificate No.: **IECEx UL 25.0085X**

Date of issue: 2026-06-08 Issue No: 1

Manufacturer: **Peter Paul Electronics Co. Inc.**
480 John Downey Drive
New Britain, CT 06050-1180
United States of America

Manufacturing locations: **Peter Paul Electronics Co. Inc.**
480 John Downey Drive
New Britain, CT 06050-1180
United States of America

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

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 Reports:

US/UL/ExTR25.0098/00 US/UL/ExTR25.0098/01

Quality Assessment Report:

US/UL/QAR24.0003/02

IECEx Certificate of Conformity

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The Model Series EA2, and EA5 solenoid valves consist of a flameproof solenoid enclosure which includes a coil inside provided with integral lead wires that exit through the threaded supply opening of the enclosure. Additionally, the valves are provided with a plunger, spring and a fluid handling body.

The Model Series OEA2 and OEA5 solenoid operators are the same as the Series EA2 and EA5 solenoid valves respectively except that they are not provided with the fluid handling body.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The equipment ambient temperature range and hazardous area temperature class for models based on the coil type is limited to the information summarized in the table below.

Base Model Series Designation	Coil Type (Wattage Ratings)	Ambient Temperature Range	T-Code (Tx*)
EA2 and OEA2	AC/DC Standard Wattage (7.3W AC or 9.5W DC)	-52°C to 70°C	T4
EA5 and OEA5	AC Standard Wattage (4W or 5.6W)	-52°C to 60°C	T4
	DC Standard Wattage (7.2W)	-52°C to 80°C	T4
	AC/DC Low Wattage (1.8W)	-52°C to 90°C	T4

- The fluid handling parts of this equipment such as the valve body which is included with Model Series EA2 and EA5 are intended to handle fluids within same temperature range as the ambient temperature range indicated in the table above.
- The flameproof joints of the Model Series EA2, OEA2, EA5 and OEA5 enclosures are not intended to be repaired.
- An IECEx certified Ex ‘db’ conduit sealing device is intended to be installed immediately (in no case more than the size of the conduit) at the flameproof conduit entry of the EA2/EA5 solenoid valves and OEA2 and OEA5 solenoid operators. This conduit sealing device should be suitable for same Gas Group as the flameproof solenoid valves and operators.

IECEx Certificate of Conformity

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Issue 1: Revised routine test method.

Annex:

Annex to IECEx UL 25.0085X Issue 1.pdf

IECEx Certificate of Conformity

TYPE DESIGNATION

Complete Nomenclature:

E A X^1 2 X^2 X^3 X^4 X^5 X^6 X^7 X^8 _ V^9 / F^{10};
O E A X^1 2 X^2 X^3 X^4 X^5 X^6 X^7 X^8 _ V^9 / F^{10};

E A X^1 5 X^2 X^3 X^4 X^5 X^6 X^7 X^8 _ V^9 / F^{10};
O E A X^1 5 X^2 X^3 X^4 X^5 X^6 X^7 X^8 _ V^9 / F^{10};

Base Model Designation

- EA – Solenoid Valve
- OEA – Solenoid Operator

X^1 - Special Options (Optional, may be omitted or up to two characters long)

- L – Low Watt (1.8W)
- H – High Pressure

Model Series Designator

- 2 – Series 20
- 5 – Series 50

X^2 - Type of valve

- 1 – 2 Way Normally Open (2WNO)
- 2 – 2 Way Normally Closed (2WNC)
- 3 – 3 Way Normally Closed (3WNC)
- 4 – 3 Way Normally Open (3WNO)
- 5 – 3 Way Directional Control (3WDC)
- 6 – 3 Way Multi-Purpose Valve (3WMP)

X^3 – Orifice (located inside valve body beneath the plunger) Size

- Two alphanumeric characters – inlet and exhaust orifice designations
  - Single alphanumeric character –single orifice is provided
  - Z – special / custom construction and making use of variable fields X^4 and X^5

X[4] – Valve Port Size and Valve Body Materials

- One or two alphanumeric characters – represents valve port size and the valve body materials ranging from Stainless Steel, Brass and Aluminum options
- Combined with X[5] using two numeric characters - to sequentially signify special / custom construction

X[5] - Valve Port and Sleeve Port Options

- One or two alphanumeric characters - denotes body port and sleeve port options
- Combined with X[4] using two numeric characters - to sequentially signify special / custom construction

X[6] - Form of Conduit Connection

C – ½ -14 NPT Female threaded conduit boss

D – ½ -14 NPT Male threaded conduit boss

F – M20 x 1.5 Female threaded conduit boss with external ground terminal

H – ½ - 14 NPT Female threaded conduit boss with external ground terminal

L – ½ - 14 NPT Male threaded conduit boss with external ground terminal

X[7] - Coil Options

M – Molded coil with Class F insulation system

P – Potted coil with Class F insulation system

H – Molded coil with Class H insulation system

F – Potted coil with Class H insulation system

X[8] – Valve Body Elastomer Options

An Alphanumeric character

_ – Denotes a space character in the product nomenclature

V[9] – Input Voltage

Up to four numeric characters

/ – Denotes a "/" character in the product nomenclature

F^{10} – Type of Input

DC – DC input

Up to Four numeric characters – denotes AC input at the stated frequency (e.g. "50" denotes 50Hz)

* Note – The model series factory designation such as Series 20 and Series 50 refers to Model EA2/OEA2 and EA5/OEA5 respectively in manufacturer drawings.

PARAMETERS RELATING TO THE SAFETY

Model Series EA2 and OEA2:

AC Standard Wattage Coils (60Hz, 7.3W):

6V, 12V, 24V, 48V, 100V, 120V, 145V, 204V, 240V, 275V, 320V, 360V, 380V, 400V, 435V, 480V, 500V, 575V; 60Hz, 7.3W

AC Standard Wattage Coils (50Hz, 7.3W):

12V, 24V, 48V, 100V, 110V, 115V, 120V, 127V, 175V, 200V, 208V, 220V, 230V, 240V, 380V, 415V, 440V, 500V; 7.3W

DC Standard Wattage Coil (9.5W):

6V, 9V, 12V, 15V, 18V, 24V, 28V, 32V, 38V, 48V, 60V, 75V, 80V, 90V, 100V, 115V, 120V, 125V, 145V, 150V, 172V; 9.5W

DC Low Wattage Coil (1.8W):

24V, 12V; 1.8W

Model Series EA5 and OEA5:

AC Standard Wattage Coils (60Hz, 4W* or 5.6W*)

12V, 24V, 48V, 100V, 120V, 141V, 208V, 240V, 245V, 460V, 480V; 60Hz, 5.6W

*4W for 2-Way Normally Closed Option; and 5.6W for 3-Way Options and 2-Way Normally Option

AC Standard Wattage Coils (50Hz, 4W* or 5.6W*)

24V, 48V, 110V, 127V, 200V, 215V, 220V, 230V, 240V, 380V, 440V, 415V; 50Hz, 5.6W

*4W for 2-Way Normally Closed Option; and 5.6W for 3-Way Options and 2-Way Normally Option

AC Low Wattage Coils (60Hz, 1.8W)

12V, 24V, 120V, 240V; 60Hz, 1.8W

AC Low Wattage Coils (50Hz, 1.8W)

110V, 230V; 50Hz, 1.8W

DC Standard Wattage Coils (7.2W):

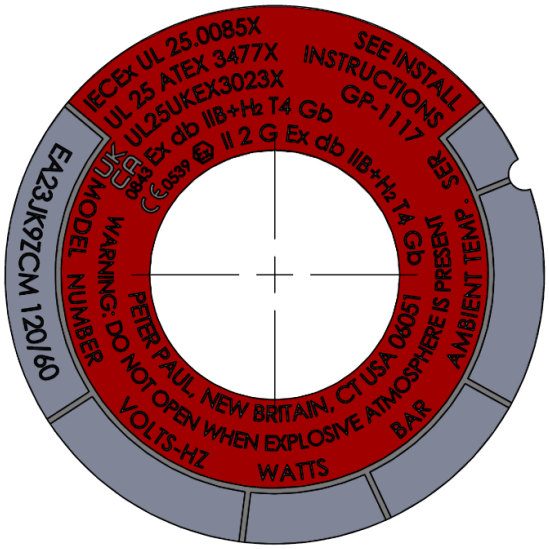
6V, 9V, 12V, 24V, 28V, 48V, 60V, 72V, 76V, 100V, 115V, 120V, 125V, 139V, 143V, 230V, 240V, 253V; 7.2W

DC Low Wattage Coils (1.8W):

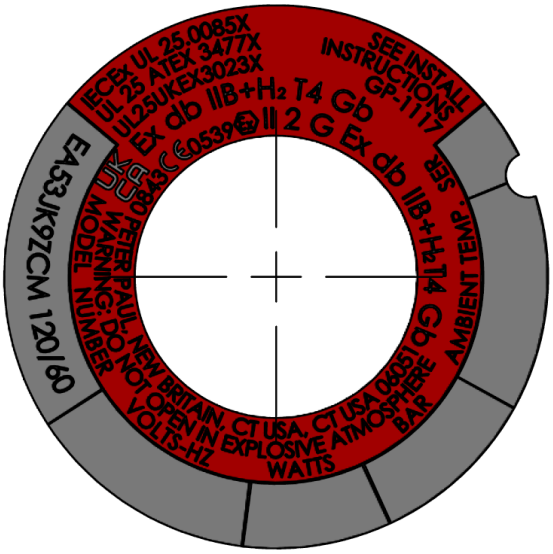
5V, 6V, 12V, 24V, 48V, 120V, 125V; 1.8W

MARKING

Marking has to be readable and indelible; it has to include the following indications:



Representative nameplate for
Model Series EA2 and OEA2



Representative nameplate for
Model Series EA5 and OEA5

ROUTINE EXAMINATIONS AND TESTS

Each piece of equipment defined above has to have successfully passed before delivery:

A. Routine Overpressure Test

Test Method: Individual parts forming the brazed and welded joints (described below) of the flameproof enclosure are tested separately with routine overpressure test using air at normal ambient temperature by pressurizing one side of each part at the required pressure (1.5 times the reference pressure). This pressure is maintained for 10 seconds, during which any pressure decay is monitored. For Model Series EA2 and OEA2 the required pressure is 129.45 psi and for Model Series EA5 and OEA5 the required pressure is 110.25 psi. This test is carried out on 100% of the production units.

Flameproof enclosure of the equipment consists of the following brazed and welded joints:

For Model Series EA2 and OEA2:
- Brazed joint between the housing and conduit hub (for constructions utilizing a fabricated housing)
- Welded joint between sleeve tube and sleeve endstop
- Welded joint between sleeve EP cup and sleeve flange
- Welded joint between sleeve tube and sleeve flange

For Model Series EA5 and OEA5:
- Brazed joint between the housing and conduit hub (for constructions utilizing a fabricated housing)
- Welded joint between sleeve tube and sleeve endstop
- Welded joint between sleeve tube and sleeve flange

Acceptance Criteria: The routine overpressure test shall be considered satisfactory if the individual parts of the flameproof enclosure suffers no permanent deformation or damage affecting integrity of flameproof joints and if there is no leakage through the joints formed by individual enclosure parts.

OR

B. Alternative Test - Weld Inspection

Test Method: As an alternative to the routine overpressure test, the integrity of the brazed and welded joints of the flameproof enclosure may be verified using one of the following inspection methods:

– radiographic weld inspection; or

– ultrasonic weld inspection; or

– magnetic particle weld inspection; or

– liquid penetrant weld inspection.

NOTE: ISO standards exist for each of the above weld inspection methods.