# EXPLOSION PROTECTION

## CERTIFICATE OF CONFORMITY

## Certificate No.: GYJ13.1295X

**Manufacturer:** **Topworx Inc.**
**(Address: 3300 Fern Valley Road, Louisville, Kentucky 40213, USA)**

**Product:** **Valve position switch**

**Model Specification:** **DXP, DXS series**

**Anti-explosion Mark:** **Please refer to the attachment of the Explosion Protection Certificate of Conformity for details**

**Product standard** **/**

**Drawing No.** **S-AV1-0003 Rev.15**

**After examining the drawings and technical documents as well as sample testing, it has been confirmed that the abovementioned products are in compliance with GB 3836.1-2010, GB 3836.2-2010 and GB 12476.1-2000 standards and this certificate is hereby issued.**

**This certificate is valid from September 30, 2013 to September 29, 2018**

**Remarks:**

1. **Please refer to the attachment of this certificate for safety precautions.**
2. **Please refer to the attachment of this certificate for specific model specifications.**
3. **This certificate is applicable to products with same model number manufactured by Emerson Machinery Equipment (Shenzhen) Co., Ltd. (Address: Bao Heng Technology Industry Park, North Hong Lang 2nd Road, District 68, Bao'an District, Shenzhen) and Emerson Process Management Magyarorszag Kft. (Address: H-8001 Szekesfehervar Berenyi U 72-100, Hungary)**
4. **[Amendment I]: additional manufacturing site, issued on July 9, 2014.**

**Director** **[Signature - illegible]**
**National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation**
**Date of Issue** **September 30, 2013**
**[Seal – National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation]**

This certificate is valid only for products matching the approved documentation and sample.

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# EXPLOSION PROTECTION
## CERTIFICATE OF CONFORMITY

**Cert No. GYJ13.1295X**

**This is to certify that the product** **Switchboxes**

**manufactured by** **Topworx Inc.**

**(Address: 3300 Fern Valley Road, Louisville, Kentucky 40213, USA)**

**which model is** **DXP and DXS series**

**Ex marking** **See attachment to this certification**

**product standard** **/**

**drawing number** **S-AV1-0003 Rev.15**

**has been inspected and certified by NEPSI, and that it conforms to GB 3836.1-2010, GB 3836.2-2010, GB 124761.1-2000.**

**This approval shall remain in force until September 29, 2018**

**Remarks**

1. **Conditions for safe use are specified in the attachment to this certificate.**
2. **Safe parameters specified in the attachment to this certificate.**
3. **This certificate is also applicable for the product with the same type manufactured by Emerson Machinery Equipment (Shenzhen) Co., Ltd. (Address: Bao Heng Technology Industry Park, North Hong Lang 2nd Road, District 68, Bao'an District, Shenzhen, P.R. China) and Emerson Process Management Magyarorszag Kft. (Address: H-8001 Szekesfehervar Berenyi U 72-100, Hungary)**
4. **[variation I]: Add manufacturing site, issued on July 9, 2014.**

**Director [Signature - illegible]**
**National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation**
**Issued Date September 30, 2013**
**[Seal – National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation]**

This certificate is valid only for products compatible with the documents and samples approved by NEPSI.

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# National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation

**(GYJ13.1295X)** **(Attachment I)**

## GYJ13.1295X Explosion Protection Certificate of Conformity Attachment I

After inspection by the National Supervision and Inspection Center for Explosion Protection and Safety Instrumentation (NEPSI), the DXP, DXS series of valve position switches produced by Topworx Inc., Emerson Process Management Magyarorszag Kft., and Emerson Machinery Equipment (Shenzhen) Co., Ltd. have been found to be in compliance with the following standards:

GB3836.1-2010 Explosive Atmosphere Part 1: Equipment - General Requirements

GB3836.2-2010 Explosive Atmosphere Part 2: Equipment Protected by Explosion Protection Type “d”

GB12476.1-2000 Electrical Equipment Used in Combustible Dust Atmosphere Part 1: Electrical Equipment Protected by Enclosure and Surface Temperature Limitation - Section 1: Technical Requirements on Electrical Equipment

The DXS series and DXP series valve position switches use flat connection surface that have explosion protection label Ex d II B+$H_2$ T3~T6 Gb, DIP A21 $T_A$, T3~T6 Db. The DXP series valve position switches use spiral connection surface that have explosion protection label Ex d II C T3~T6 Gb, DIP A21 $T_A$, T3~T6 Db. The enclosure protection level satisfies the IP66 and IP67 requirements. The Explosion Protection Certificate of Conformity’s certificate number is GYJ13.1295X.

[Seam-riding seal]

This certificate recognizes products with the specific model number: DX*a-b c d e f g h*

Where: *a* indicates enclosure material; can be P or S;

*b* indicates main line and sensor; can be L, M, K, T or O;

*c* indicates equipped with HART protocol or not; can be H, X or 1~6

*d* indicate the type of explosion protection; can be 1 which represents II B+$H_2$ or C which represents II C;

*e f g h* are parameters not related to explosion protection.

### I. Specific Conditions for Safety Precaution

If the certificate number ends with a “X”, it indicates that the product has special conditions for safety precaution:

1. This product is not suitable for use in the presence of carbon disulfide explosive gas atmosphere;
2. After this product has been correctly installed, the manifold pressure should not exceed 1MPa;
3. Enclosure protection level should be IP66 or IP67, it may only be used in ambient temperature under 110°C;
4. The fastener performance level should meet A2-70, the thread precision should be M8X1.25-6H;
5. Maintenance of the connection surfaces of product explosion protection should be done by the manufacturer.

### II. Safety Precaution

1. The rated input voltage for this product is 240V, the rated input current is 15A, and switches, onsite bus modules, guide post and terminal post array with power dissipation of less than 10W may be installed inside;

2. Relationship between product's temperature groups and the ambient temperature:

| Gas Temperature Group | Ambient Temperature Range | Dust Temperature Group | Ambient Temperature Range |
|---|---|---|---|
| T3 | -60ºC ~ +175ºC | / | / |
| T4 | -60ºC ~ +110ºC | T4 | -50ºC ~ +110ºC |
| T5 | -60ºC ~ +75ºC | T5 | -50ºC ~ +75ºC |
| T6 | -60ºC ~ +60ºC | T6 | -50ºC ~ +60ºC |

3. When the ambient temperature is -60ºC, the manufacturer should conduct routine static pressure test before the product leaves the factory, the static pressure for the II C group is 2.8MPa, and 1.91MPa for II B group, and the product's outer enclosure should not have permanent damage or deformation.
4. The product's outer enclosure is equipped with grounding terminal. When it is used by the user after installation, it can be grounded.
5. The installation site must comply with the principle of "open the cap after power is turned off".
6. Harmful gases with corrosive effect on aluminum alloy should not be present at the installation site.
7. When installing product onsite, cables that have passed the inspection of State designated testing laboratories with explosion protection grade of Exd II C, thread specification of 1/2NPT, 3/4NPT, M16x1.5 or M20x1.5 must be used for the cable entry point that leads into the device or blanking element, and redundant cable inlets must be effectively sealed by blanking elements. [Seam-riding seal]
8. The user should not replace the parts by themselves, and should work with the product manufacturer to jointly resolve malfunctions that occurred during operations to prevent damage.
9. Maintenance may proceed only when the installation site has been confirmed not to have any harmful gases.
10. When this product is used onsite, its surface should be cleaned regularly and the thickness of dust accumulation should not exceed 5mm.
11. The installation, use and maintenance of this product shall comply with the relevant provisions in the product manuals, GB3836.13-1997 "Electrical Equipment Used in Explosive Gas Atmosphere Part 13: Inspection and Maintenance of Electrical Equipment Used in Explosive Gas Atmosphere", GB3836.15-2000 "Electrical Equipment Used in Explosive Gas Atmosphere Part 15: Electrical Installation in Dangerous Places (Except Coal Mines)", GB3836.16-2006 "Electrical Equipment Used in Explosive Gas Atmosphere Part 16: Inspection and Maintenance of Electrical Equipment (Except Coal Mines)", GB50257-1996 "Electrical Equipment Installation and Acceptance Standards for Electrical Equipment Installation in Dangerous Explosive and Fire Hazard Atmosphere", GB15577-2007 "Safety Regulation on Dust Explosion Protection", and GB12476.2-2006 "Electrical Equipment Used in Combustible Dust Atmosphere Part 1: Electrical Equipment Protected by Enclosures and Surface Temperature Limitation Section 2: The Selection, Installation and Maintenance of Electrical Equipment".

**III. Responsibilities of the Manufacturer:**

1. The manufacturer must incorporate the special requirements and safety precautions mentioned above into the product manual;
2. The manufacturer must produce the product strictly in compliance with the documentation approved by NEPSI;

3. The product nameplate must at least include the following:
   a) NEPSI Approval Label (please refer to the Explosion Protection Certificate of Conformity)
   b) Product's Explosion Protection Label
   c) Explosion Protection Certificate of Conformity's Certificate Number
   d) Ambient Temperature

National Supervision and Inspection Center for
Explosion Protection and Safety of Instrumentation
September 30, 2013
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Explosion Protection and Safety of Instrumentation]

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riding
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