



1 **EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres
Directive 94/9/EC**

3 EC - Type Examination Certificate Number: **Baseefa11ATEX0035X**

4 Equipment or Protective System: **D2-FF Valvetop Switchbox**

5 Manufacturer: **Topworx Incorporated**

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

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Baseefa, Notified Body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report No. GB/BAS/ExTR11.0276/00

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:


EN 60079-0: 2009 EN 60079-11: 2007 EN 60079-27: 2008 EN 60079-31: 2009

except in respect of those requirements listed at item 18 of the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include the following :

 **II 2 GD Ex ib IIC T4 Gb (-20°C ≤ T_a ≤ +50°C)
Ex tb IIC T80°C Db IP67 (-20°C ≤ T_a ≤ +50°C)**

This certificate may only be reproduced in its entirety, without any change, schedule included.

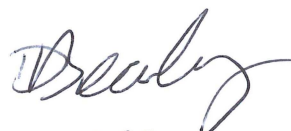
Baseefa Customer Reference No. **2191**

Project File No. **10/0255**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

Baseefa

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PP DBREARLEY
R S SINCLAIR
DIRECTOR
On behalf of
Baseefa

Re-issued 10 April 2014 to replace original



13

Schedule

14

Certificate Number Baseefa11ATEX0035X

15 Description of Equipment or Protective System

The D2-FF Valvetop Switchbox is designed to control and provide feedback of the position of an actuator / valve combination located in the hazardous area via a Foundation Fieldbus or FISCO network.

The equipment comprises an enclosure either made of stainless Steel (DXS models), coated aluminium (DXP models) or glass fibre reinforced resin enclosure (DXR models) housing a FF CC Electronic Unit, up to two certified piezoelectric pilot valves, up to two limit switches and an optional potentiometer position sensor. A shaft assembly passes through the enclosure base to which either a potentiometer is connected to provide positional information from the actuator / valve connected or a disc with metallic contacts is fitted to activate limit switches fitted around the shaft, or a combination of both. Based on the inputs from the devices fitted, the FF CC Electronic Unit processed the information and communicates it via the Fieldbus network. The FF CC Electronic Unit also controls the operation of the pilot valves, when fitted, which are connected to the pneumatic valves attached to the side of the enclosure.

On top of the Switchbox enclosure a visual indicator is fitted which mechanically connects to the shaft assembly inside to provide an indication of the position of the actuator / valve to which the equipment is connected.

External connections to the equipment are made using a plug and socket connector with screw terminals via one of two threaded entries on either side of the enclosure. The installation of external connections and the plugging of the unused entry must be carried out using appropriate Ex e or Ex n cable glands or blanking plug components with a minimum IP rating of IP67 certified by an approved certification body.

Input Parameters: Bus Connector J1 pins 1 to 3

I.S Parameters

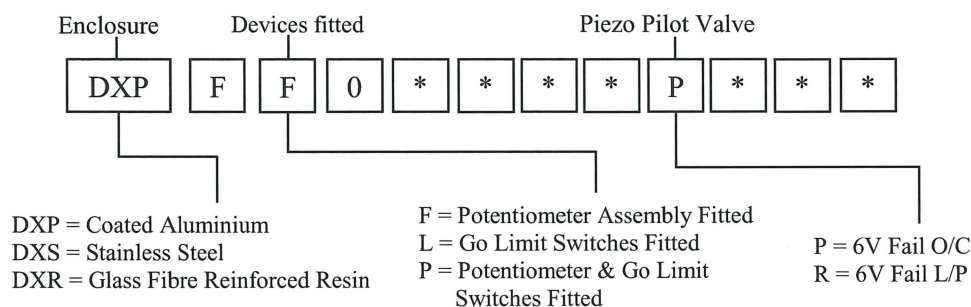
U_i	=	30V	C_i	=	5nF
I_i	=	380mA	L_i	=	10 μ H
P_i	=	1.5W			

FISCO Input Parameters

U_i	=	17.5V	C_i	=	5nF
I_i	=	380mA	L_i	=	10 μ H
P_i	=	5.32W			



The following model range is covered by this certificate:



* Denotes any number or character

16 Report Number

GB/BAS/ExTR11.0276/00

17 Specific Conditions of Use

- When fitted, only non-combustible fluids may be used in the pneumatic circuit.
- DXR Models Only:** The equipment shall only be installed in a location where there is a low risk of mechanical damage. The enclosure constitutes a potential electrostatic risk and must only be cleaned with a damp cloth.

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CERT-ES-02495-1*	1 of 4	c	10/26/11	Assembly, FF Device DXP / DXS
CERT-ES-02495-1*	2 of 4	c	10/26/11	Assembly, FF Device DXR
CERT-ES-02495-1*	3 of 4	c	10/26/11	Assembly, Shaft D2-FF DXP/DXS/DXR
CERT-ES-02495-1*	4 of 4	c	10/26/11	Switchbox Circuit Diagram
CERT-ES-02496-1*	1 of 1	g	10/27/11	Assembly, Nameplate DXP/DXR/DXS W/D2-FF I.S.
ES-01962-1	1 to 4	2	4/19/11	Board, Button, FF
ES-02040-1	1 & 2	4	4/19/11	Assembly, FF Device
ES-02193-1	1 of 8	6	08/18/11	Assembly, Board FF CC Board Schematic PCB
ES-02193-1	2 of 8	6	08/18/11	Assembly, Board Button and LED (X1) Schematic PCB
ES-02193-1	3 of 8	6	08/15/11	Assembly, Board Power (X4) Schematic PCB
ES-02193-1	4 of 8	6	08/18/11	Assembly, Board Micro (X3) Schematic PCB

Certificate Number
Baseefa11ATEX0035X



Issued 12 December 2011
Page 4 of 4

Number	Sheet	Issue	Date	Description
ES-02193-1	5 of 8	5	05/24/11	Assembly, Board Pilot Valve (X2) Schematic PCB
ES-02193-1	6 of 8	6	08/18/11	Assembly, Board FF CC Board
ES-02193-1	7 of 8	6	08/18/11	Assembly, Board PCB Specification
ES-02193-1	8 of 8	6	08/18/11	Assembly, Board FF CC Board Parts List

* The above drawings are associated and held with IECEx Certificate No. IECEx BAS 11.0022X