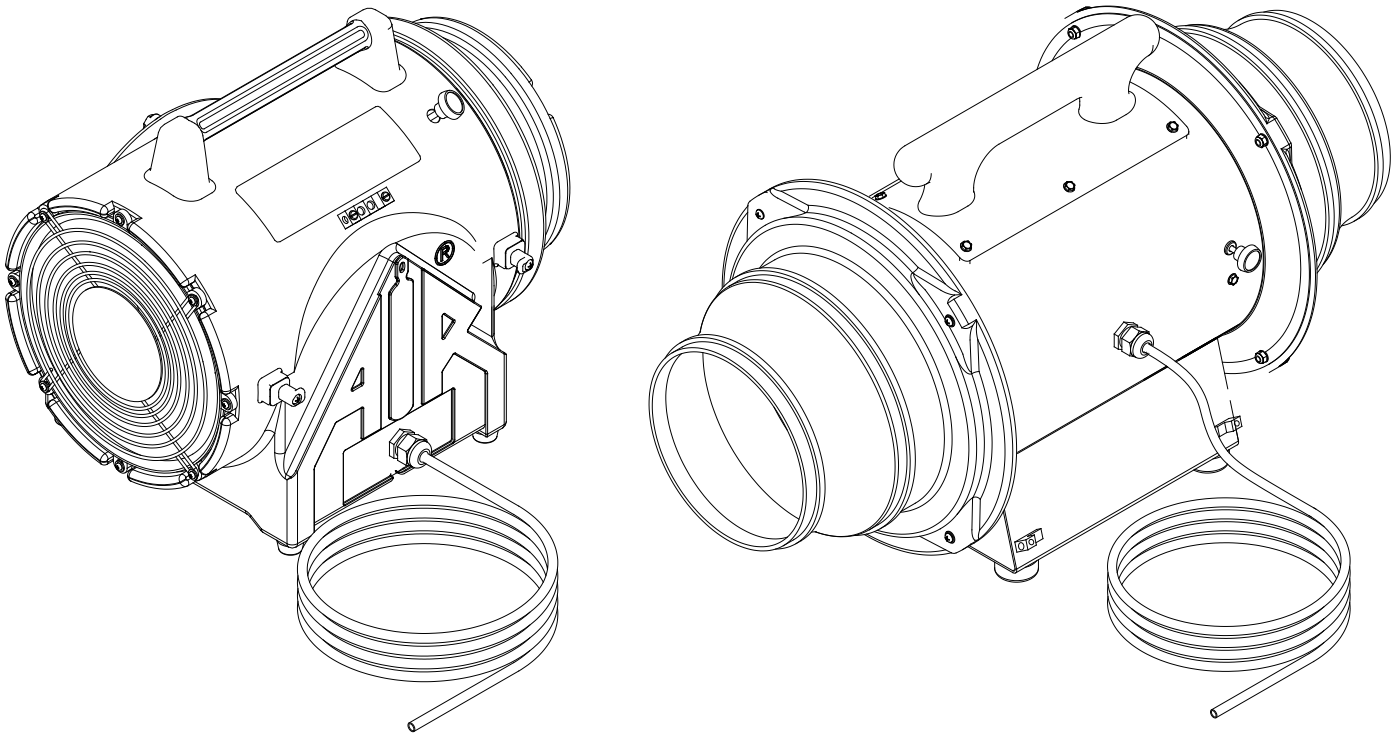
Manual No. BLWR047
Rev. 1 February 2015

OPERATING MANUAL

MODELS: CVF-8X220 AND SVF-10X220

PORTABLE FANS FOR HAZARDOUS LOCATIONS



II 2 G c
Ex d IIB T6 Gb
ITS 14 ATEX 17992X

IECEx ETL 14.0010X
Ex d IIB T6 Gb

0359

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TECHNICAL INFORMATION, SET-UP, AND CARE

EXPLOSION PROOF PORTABLE FAN MODELS: CVF-8X220 AND SVF-10X220

TECHNICAL

These fans have been designed for use in hazardous locations in accordance with the ATEX Directive 94/9/EC and the applicable IECEx criteria. It is the user's responsibility to determine the suitability of these fans for use in the intended environment based on tested and approved ratings for the fans:

II 2 G c
Ex d IIB T6 Gb
ITS 14 ATEX 17992X

IECEx ETL 14.0010X
Ex d IIB T6 Gb

These fans manufactured by Air Systems International, Inc. conform to the relevant Essential Health and Safety Requirements of the European Machinery Directives and evaluated to:

ATEX:
EN 13463-1: 2009
EN 13463-5: 2011
EN 14986: 2007

IECEx:
IEC 60079-0: 2011
IEC 60079-1: 2007

89/392/EEC, 91/368/EEC, 93/44/EEC, 93/68/EECI, 94/9/EC, and 76/117/EEC

CE 0359

DESCRIPTION OF FAN COMPONENTS

Model CVF-8X220 is comprised of an explosion-proof motor, conductive polyethylene blower housing, metal finger guards, and external grounding lugs. Model SVF-10X220 contains the same components except the blower housing is made of steel. The units have beeen tested by Intertek and assigned ATEX and IECEx certification numbers from the ATEX notified body and IECEx certification body respectively.

ITS14 ATEX 17992X
1ECEx ETL 14.0010

The on/off switch is designed and built-in to each motor and a 10 meter power cable is installed with each fan. **SPECIAL CONDITION OF SAFE USE**; power cable must be outfitted with an explosion-proof plug that is approved for the hazardous location that the fan will be used in. appleton manufatures the explosion-proof plug that complies with international standards: en 60079-0, -1,7,61241-0,-1.

TECHNICAL INFORMATION, SET-UP, AND CARE

EXPLOSION-PROOF PORTABLE FAN MODELS: CVF-8X220 AND SVF-10X220

Start-Up And Installation

Secure a grounded electrical source that delivers 220vac, 50/60hz, and at a minimum 5 amps. If the blower is going to be used in a hazardous location, make certain the proper plug is used and the electrical receptacle is design to handle the plug rated for the hazardous location and in conformance with local electrical codes. Inspect the blower to ensure all safety guards are in place and that the unit has not been damaged prior to use. Inspection and set-up should only be done by trained personnel in the proper use of this equipment. Make sure the blower intake is not located near the exhaust of a gasoline or diesel engine; this will cause the blower to pull in carbon monoxide and force it into the space that is being ventilated.

OPERATION

The blower is off when the on/off switch is fully depressed and the “power on” occurs when the switch is pulled outward from the fan housing. These fan motors are equipped with automatic thermal overload switches which may turn off the blower during operation. Once the fan motor cools, the motor will re-start automatically. If this condition occurs, disconnect the fan from the electric source and determine the reason for motor overheating. Check to make sure that: 1) the proper extension cord gauge is used 2) check the blower intake for debris that may be clogging the air inlet or causing the fan blade to not rotate. Always use conductive anti-static ducting when working in a hazard area. If using Air Systems’ ducting, attach the installed ground wires to the blower for added static dissipation. If the Conductive Saddle Vent® device from Air Systems is being used, make sure the duct is secured to the black Conductive Saddle Vent® properly. The entire ventilation system should be checked above ground for conductivity prior to starting work; this can be done with an Ohm meter by touching the meter lead to the farthest end of the duct and the other meter lead to the ground lug (or ground wire) on the blower. A reading of less than 750K ohms will assure that static charges will move safely to the grounded source.

MAINTENANCE AND WARRANTY

Before each use, inspect the fan for proper finger guards being installed and that no debris is lodged in the blower intake. Inspect the power cord for no breaks or exposed wire. Dust can accumulate on the inside of the blower housing and fan blade. These can be blown with an air nozzle to remove excess dust. No other annual maintenance is required. All Air Systems fans and blowers are warranted for one year from the date in purchase. Contact your authorized dealer for any other repair or maintenance questions.

WARRANTY DISCLAIMER

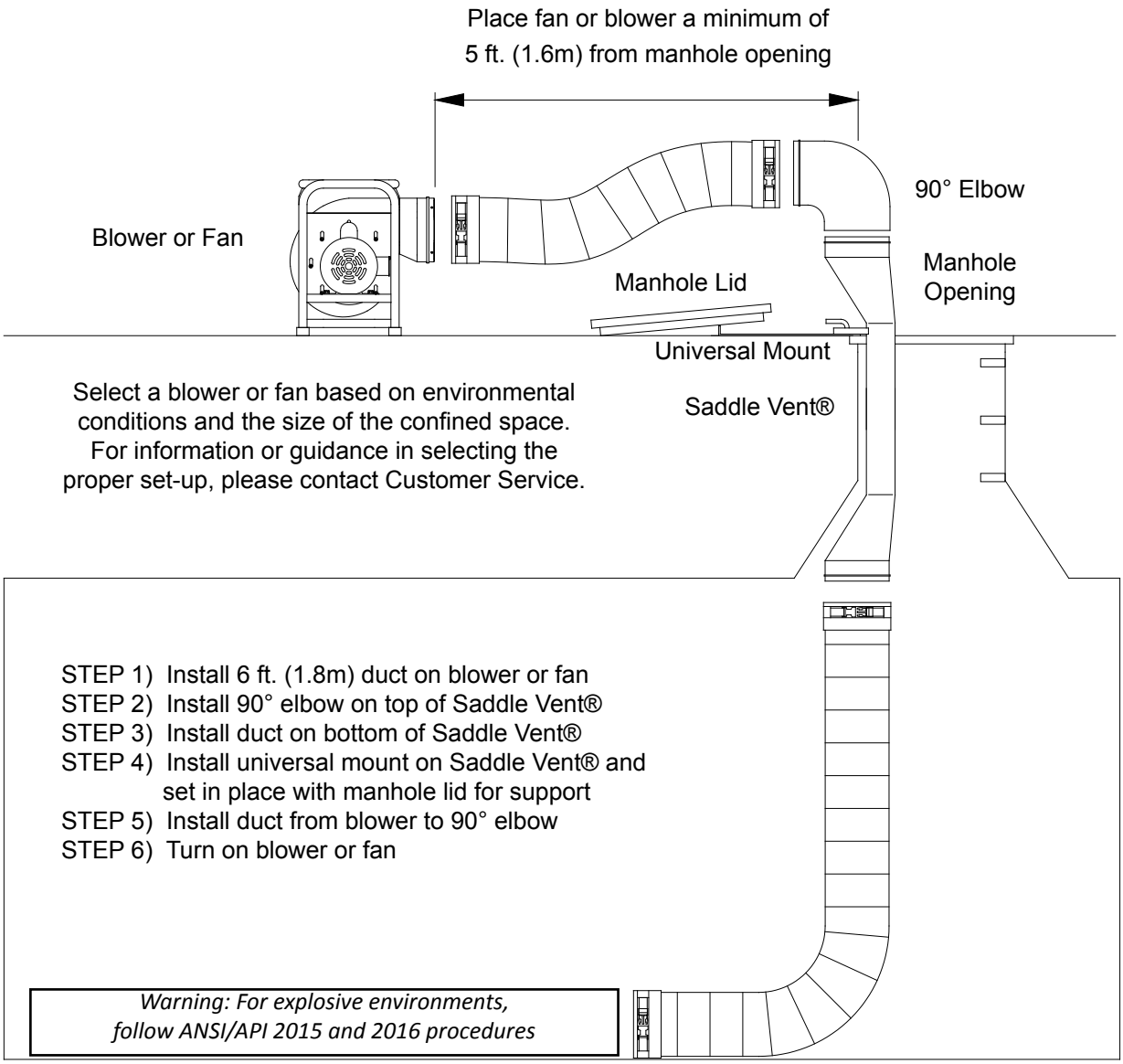
Air Systems' manufactured equipment is warranted to the original user against defects in workmanship or materials under normal use for one year from the date of purchase. Any part which is determined by Air Systems to be defective in material or workmanship will be, as the exclusive remedy, repaired or replaced at Air Systems' option. This warranty does not apply to electrical systems or electronic components. Electrical parts are warranted, to the original user, for 90 days from the date of sale. During the warranty period, electrical components will be repaired or replaced at Air Systems' option.

NO OTHER WARRANTY, EXPRESSED OR IMPLIED, AS TO DESCRIPTION, QUALITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER MATTER IS GIVEN BY AIR SYSTEMS IN CONNECTION HEREWITH. UNDER NO CIRCUMSTANCES SHALL THE SELLER BE LIABLE FOR LOSS OF PROFITS, ANY OTHER DIRECT OR INDIRECT COSTS, EXPENSES, LOSSES, OR DAMAGES ARISING OUT OF DEFECTS IN, OR FAILURE OF THE PRODUCT OR ANY PART THEREOF.

The purchaser shall be solely responsible for compliance. Although Air Systems International believes that its products, if operated and maintained as shipped from the factory and in accordance with our "operations manual", there are no implied or expressed warranties of such compliance extending beyond the limited warranty described herein. Product designs and specifications are subject to change without notice. **Rev. 2, 12/98**

The Saddle Vent® Ventilation System

Typical Saddle Vent® Setup Procedure



WARNING: HAZARDOUS LOCATION OPERATIONS

Use an explosion-proof or intrinsically safe blower or fan, conductive ducting, and The Conductive Saddle Vent® System. Attach all grounding wires and assure a complete circuit to the blower or fan in order to remove static charges.

SAFETY PRECAUTIONS

READ AND FOLLOW ALL INSTRUCTIONS BELOW

All ventilation procedures should comply with regulations. Air quality should be tested prior to ventilating a confined space. Air quality should be tested continuously during confined space occupancy to ensure a stable atmosphere and worker safety as atmospheric conditions can change rapidly. Additional procedures and recommendations are available from federal, state, and local agencies. **DO NOT** operate these fan units in a vertical position or with the flange or guards removed.

WARNING

Fan and blower models with the “EX” or “X” designation are the only models approved for use in hazardous locations. These models are *NOT* approved for use in mines.

Note: If volatile or explosive vapors are suspected, use Air Systems’ explosion proof in-line fan, Model: SVF-10X220 or explosion proof contractors fans, Models: CVF-8X220 or CVF-12EX22.

Note: For confined space ventilation in non-hazardous locations, use Air Systems’ confined space ventilation kit, Model SV-CUP. For hazardous locations use ventilation kit, Model SV-CUPCND along with one of the above explosion proof blowers or fans.

SPECIFICATIONS

Motor Type	220 VAC, 50/60 Hz, .25 HP/.33 HP, 1.1 AMPS/2.2 AMPS, .19 kw DEMKO ATEX Certified: II 2 G Ex d IIB Gb IECEx UL 12.0034U Ex d IIB Gb INMETRO UL-BR 12.036OU Ex d IIB Gb
Outlet Size	8” Diameter (203 mm)
CVF-8X220 Flow Rates	Free Air: 823 CFM (1398 cm/hr) 15 ft. of duct with one 90° bend: 655 CFM (1113 cm/hr) 15 ft. of duct with (2) 90° bends: 552 CFM (938 cm/hr)
SVF-10X220 Flow Rates	Free Air: 1159 CFM (1969 cm/hr) 15 ft. of duct with one 90° bend: 725 CFM (1232 cm/hr) 15 ft. of duct with two 90° bends 715 CFM (1215 cm/hr)

SETUP AND OPERATION

STEP 1)
Explosion-proof models should be fitted with an ATEX/IECEx approved explosion-proof plug (Killark P/N ELAP15232) to meet hazardous locations specifications. The plug should not be disconnected or connected in a hazardous environment.

STEP 2)
Place fan in a clean fresh air environment. Note: Inspect fan for damaged or worn parts. Inspect all ducting and couplings for possible air leaks prior to fan operation.

Note: Air quality of the confined space should be tested prior to ventilation. If air quality of the confined space is unacceptable, consult a trained professional.

⚠ CAUTION ⚠

If explosive or volatile vapors are suspected or present, test the fan for proper grounding using an ohm meter. All static electricity must be removed from the fan and attached ducting prior to energizing the fan. Conductive ducting should be tested semi-annually to assure resistance (ohms) does not exceed 750k. If sufficient resistance is not achieved, the duct should be removed from service.

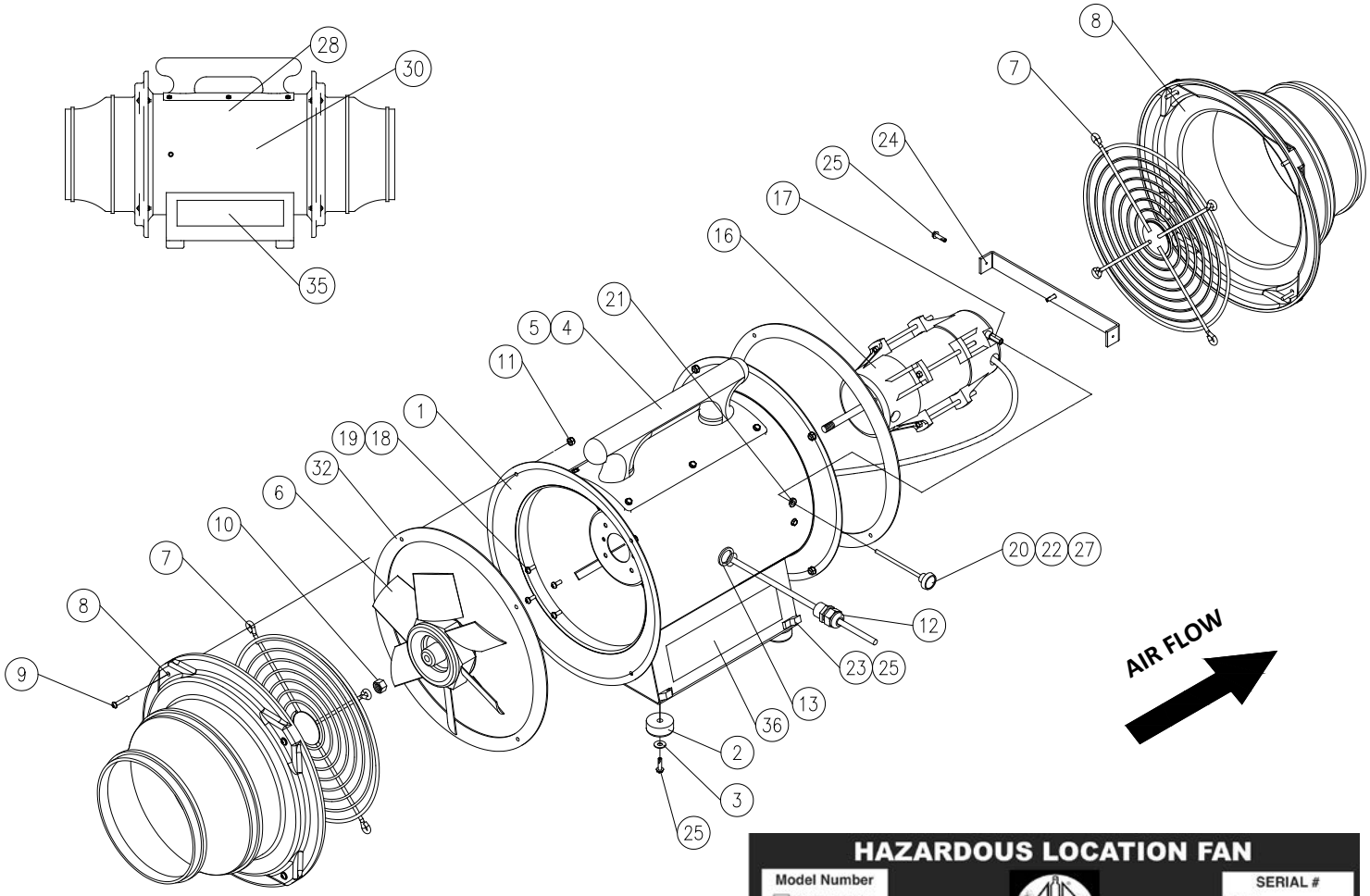
STEP 3)
Install duct cuff to exhaust flange and tighten cinch strap. Keep bends and kinks in ducting to a minimum to maximize air flow.

NOTE: The use of conductive ducting is recommended when operating in potentially explosive environments. Assure that the fan is properly grounded before operating and the ground wire in the conductive ducting is attached to the fan and Saddle Vent®, if used.

STEP 4)
The “ON/OFF” switch is integrated in the motor. Pull the “ON/OFF” switch knob outward to turn the fan “ON”. The unit is now operational. To turn the fan “OFF,” push the switch knob in toward the fan housing.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Excessive vibration	Air intake blocked	Turn fan off and clear debris from intake.
	Possible internal damage	Turn off and inspect fan blades, shaft, and housing for debris, damage, and loose screws. Note: Never run fan for extended periods without installing duct on the exhaust flange.
	Possible external damage	Turn fan off and inspect for loose guards, broken welds, etc.
Circuit breaker trips	Voltage output insufficient	Test outlet with volt meter.
Automatic thermal overload in motor trips	Extension cord is not of sufficient gauge	Eliminate extension cord and restart or obtain extension cord of sufficient gauge

System Components: Model SVF-10X220



ATEX AND IECEx Certified Product
No Unauthorized Changes

SAFETY COMPONENT-NO SUBSTITUTION

Bluffton Motor Works electric motor model no. 1933007427, part no. MTR043EX22 supplied with 7.62 mm lapp cable.
Motor approvals: ATEX DEMKO 134885U, IECEx UL 12.0034U, INMETRO UL-Br 12.0360U
Hazardous Location Ex d IIB Gb

SPECIAL CONDITION OF SAFE USE

User specified ATEX approved plug to meet hazardous location requirement.
KILLARK part no. ELAP15232

Metal used on this fan contains steel with small or trace added elements less than 7.5% total content of magnesium, titanium, and zirconium.

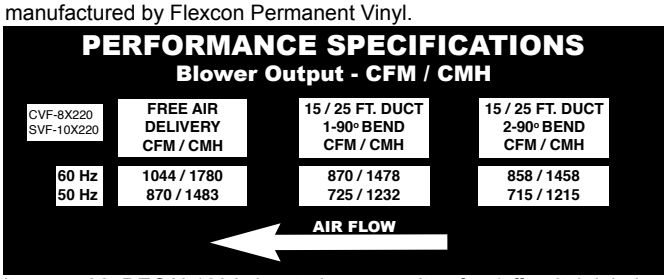
Item #23, ground lug, manufacturer part no. KA6U. wire capacity 6-14 AWG. or 6.35 mm (1/4") maximum.

Item # 1, fan housing, is powdercoated red. MSDS # RFR620R8055

Nominal dimensions of unit:
721 mm (L) X 343 mm (W) X 368 mm (H)

Tip Clearance For Installed Fan, 3.00 mm (+1.0 mm/-1.5 mm)

Item no. 35, DECAL168 is located to the left of on/off switch label manufactured by Flexcon Permanent Vinyl.



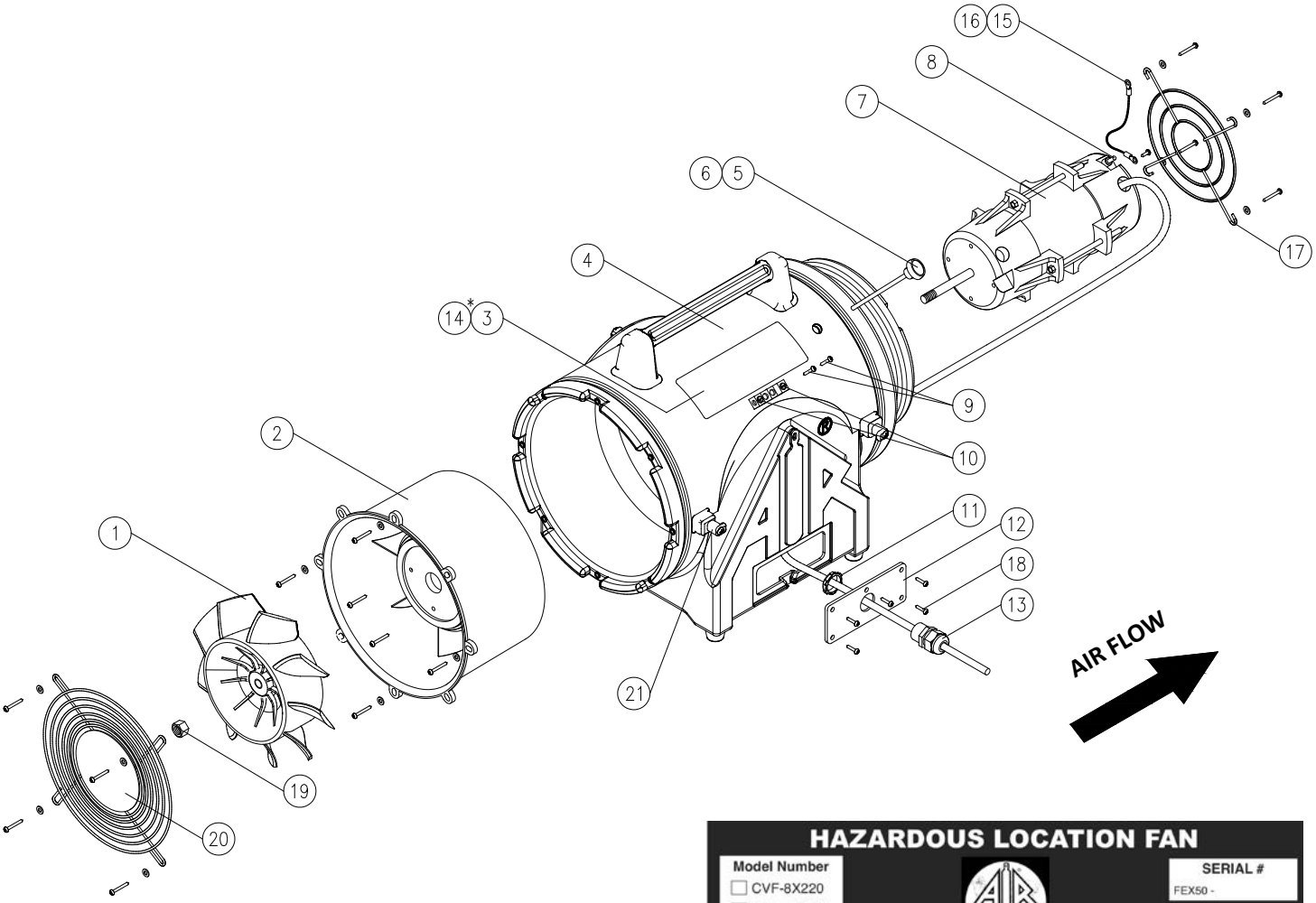
Item no. 36, DECAL169 is located on opposite of on/off switch label manufactured by Flexcon Permanent Vinyl.

		NAME	DATE			
AIR SYSTEMS INTERNATIONAL 829 JUNIPER CRESCENT CHESAPEAKE, VA 23320 TEL 1-800-866-8100 FAX (757) 424-5348	PREPARED	M. BONEY	4/1/14	10" EXPLOSION PROOF FAN WITH RED STEEL CONDUCTIVE HOUSING 220-230 VAC/50 Hz		
	CHECKED	S. INTRAVATOLA	4/1/14	DATE: 03/27/13	DWG NUMBER: SVF-10X220	REV: 0
	APPROVED	D. ANGELICO	4/1/14	FILE: SVF-10X220	SHEET: 1 OF 1	

System Components: Model SVF-10X220

SEQ. #	ITEM #	DESCRIPTION	BOM QUANTITY
1	MILF-10BR	10” STEEL BASE - RED, AXALTA, P/N RED RIVER HP II	1
2	HDWR026	RUBBER FEET FOR SVF FANS - 70 DURO SBR	4
3	FW3/16	3/16 USS FLAT WASHER ZINC COATED STEEL	4
4	FS10X050W	10-24 X 1/2 HEX WASHER, ZINC COAT STEEL	6
5	SVF-10HNDL	HANDLE, BLACK, LLDPE, EXXON P/N LL8555	1
6	SVF-FAN	AXIAL FAN, REINFORCED FIBER, WINGFAN P/N PACAS	1
7	MGDAXFAN1	FINGER GUARD, ZINC COATED STEEL	2
8	SVF-108ADP	10” TO 8” SHROUD, BLACK, LLDPE, EXXON P/N LL8555	2
9	FS1032X78T	10-32 X 7/8 TRUSS,PHILLIPS, ZINC COATED	8
10	FNM8X1ESN	M8 X 1.0 ELASTIC STOP NUT, ZINC COATED	1
11	FN1032ESN	10-32 ELASTIC STOP NUT ZINC COATED	8
12	ELA001	CABLE GLAND, 5-12mm, ALTECH P/N 5308921	1
13	ELA007	1/2 CONDUIT LOCK NUT, ZINC COATED STEEL	1
16	MTR043EX22	ATEX APPROVED MOTOR,220-230 VAC,50 HZ	1
17	HDWR068	COUPLING NUT 10-24 X 3/4 LONG,GRADE 2	1
18	FS1032X050	10-32 X .5, ROUND PHILLIPS HEAD, ZINC	4
19	FW10LOCK	#10 LOCKWASHER ZINC COATED	4
20	FS10X350TS	10-24 X 3-1/2 FULLY THREADED STEEL STUD	1
21	HDWR027	GROMMET FOR SV FANS-60 DURAMETER, SBR	1
22	HDWR070	BLACK ABS KNOB WITH 10-24 THREADS, SVF	1
23	ELA051	ALUMINUM GROUNDING LUG, 6-14 AWG (6.35mm MAX)	2
24	MBSVF10EXP	STABILIZER BRACKET FOR SVF-10EX SERIES, STEEL	1
25	FS10X075W	10-24 X 3/4 HEX WASHER, ZINC COATED	6
27	ELA039	1/4” DIAMETER SHRINK TUBING, PVC	0.25
28	DECAL045	MOTOR ROTATION DECAL, PERMANENT OUTDOOR	2
30	DECAL043	AIR SYSTEMS WORLD LOGO DECAL - 4” DIA.	1
32	ILF-G	GASKET, ROUND, 8 HOLES, FOR SVF FANS, SBR	2
35	DECAL168	SERIAL NO. DECAL,CVF-8X220,SVF-10X220	1
36	DECAL169	PERF. SPEC. DECAL, CVF-8X220, SVF-10X220	1

System Components: Model CVF-8X220



ATEX AND IECEx Certified Product
No Unauthorized Changes

SAFETY COMPONENT-NO SUBSTITUTION

Bluffton Motor Works electric motor model no. 1933007427, part no. MTR043EX22 supplied with 7.62 mm lapp cable.
Motor approvals: ATEX DEMKO 134885U, IECEx UL 12.0034U, INMETRO UL-Br 12.0360U
Hazardous Location Ex d IIB Gb

SPECIAL CONDITION OF SAFE USE

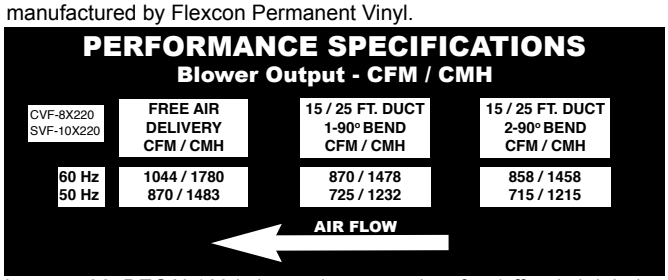
User specified ATEX approved plug to meet hazardous location requirement.
KILLARK part no. ELAP15232

Metal used on this fan contains steel with small or trace added elements less than 7.5% total content of magnesium, titanium, and zirconium.

Item #23, ground lug, manufacturer part no. KA6U. wire capacity 6-14 AWG. or 6.35 mm (1/4") maximum.

Nominal dimensions of unit:
419 mm (L) X 279 mm (W) X 368 mm (H)
Tip Clearance For Installed Fan, 3.00 mm (+1.0 mm/-1.5 mm)

Item no. 35, DECAL168 is located to the left of on/off switch label manufactured by Flexcon Permanent Vinyl.



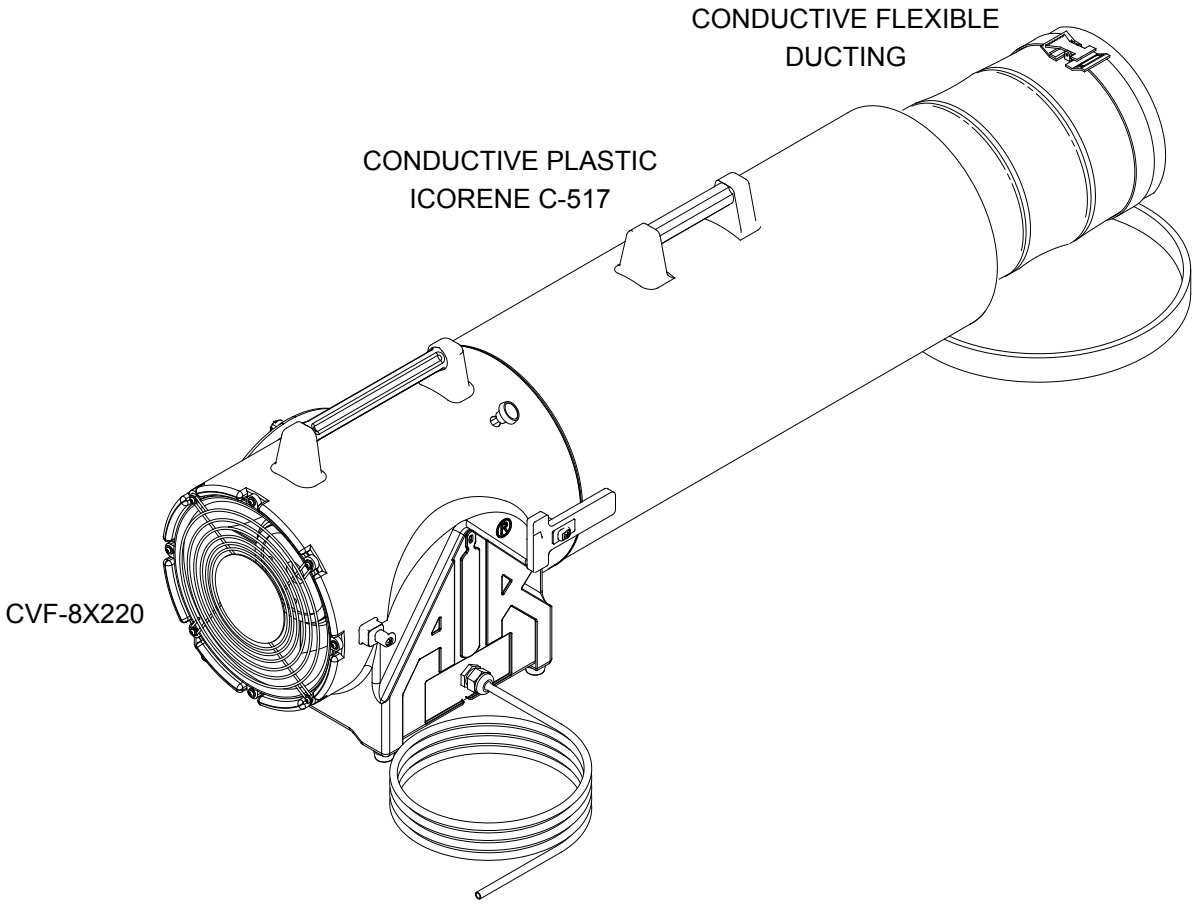
Item no. 36, DECAL169 is located on opposite of on/off switch label manufactured by Flexcon Permanent Vinyl.

		NAME	DATE	8" EXPLOSION PROOF FAN WITH BLACK CONDUCTIVE HOUSING 220-230 VAC/50 Hz		
AIR SYSTEMS INTERNATIONAL 829 JUNIPER CRESCENT CHESAPEAKE, VA 23320 TEL 1-800-866-8100 FAX (757) 424-5348	PREPARED	M. BONEY	4/1/14			
	CHECKED	S. INTRAVATOLA	4/1/14	DATE: 10/07/13	DWG NUMBER: CVF-8X220	REV: 0
	APPROVED	D. ANGELICO	4/1/14	FILE: CVF-8X220		SHEET: 1 OF 1

System Components: Model CVF-8X220

SEQ. #	ITEM #	DESCRIPTION	QUANTITY
1	CVF-FANCN	8” FAN, POLYPROPYLENE, POLYONE #PP-16CP/000-2HI	1
2	CVF-MM	MOTOR MOUNT, POLYPROPYLENE, POLYONE #PP-16CP/000-2HI	1
3	DECAL168	SERIAL NO. DECAL,CVF-8X220,SVF-10X220	1
4	CVF8EXP-NM	CONDUCTIVE POLYETHYLENE HOUSING, ICORENE 517-C	1
5	FS10X350TS	10-24 X 3-1/2 FULLY THREADED STEEL STUD	1
6	HDWR070	BLACK ABS ON/OFF KNOB WITH 10-24 THREADS	1
7	MTR043EX22	ATEX APPROVED MOTOR,220-230 VAC,50 HZ	1
8	HDWR068	COUPLING NUT 10-24 X 3/4 LONG,GRADE 2, STEEL	1
9	FS10X5/8TH	#10 X 5/8 TRUSS HEAD PHILLIPS SCREW, STEEL	2
10	ELA051	ALUMINUM GROUNDING LUG, 6-14 AWG (6.35mm MAX)	2
11	ELA007	1/2 CONDUIT LOCK NUT, ZINC COATED STEEL	1
12	MBKCVF8EXP	MOUNTING PLATE, CVF SERIES EXP FANS, POLYETHYLENE	1
13	ELA001	CABLE GLAND, 5-12mm, ALTECH P/N 5308921	1
14	DECAL169	PERFORMANCE DECAL, CVF-8X220, SVF-10X220	1
15	HDWR006	16-14 AWG. NON-INSULATED RING TERMINAL, STEEL	2
16	ELCB033G	18 GAUGE STRANDED WIRE-GREEN	0.5
17	CVF-RG	REAR GUARD, ZINC COATED STEEL	1
18	FS83/4STSS	#8 X 3/4 PAN HEAD SERRATED THREAD SCREW, STEEL	9
19	FNM8X1ESN	M8 X 1.0 ELASTIC STOP NUT, STEEL	1
20	CVF-FG	FRONT GUARD, ZINC COATED STEEL	1
21	CVF-POST	LATCHING POST	4

ACCESSORY DRAWING
CONDUCTIVE CANISTER FOR CVF-8X220



REPLACEMENT DUCT CANISTER

CVF-CND6	Conductive Duct Canister with 6 Ft. (183 cm.) of Conductive Duct
CVF-CND15	Conductive Duct Canister with 15 Ft. (457 cm.) of Conductive Duct
CVF-CND25	Conductive Duct Canister with 25 Ft. (762 cm.) of Conductive Duct

EXPLOSION PROOF PLUG FOR HAZARDOUS LOCATIONS

ELAP15232	250 VAC/15 amp - Killark Universal
ELAP20232	250 VAC/20 amp - Killark Universal

CONDUCTIVE SADDLE VENT® VENTILATION KITS

CVFX25K220
VENTILATION KIT WITH CVF-8X220

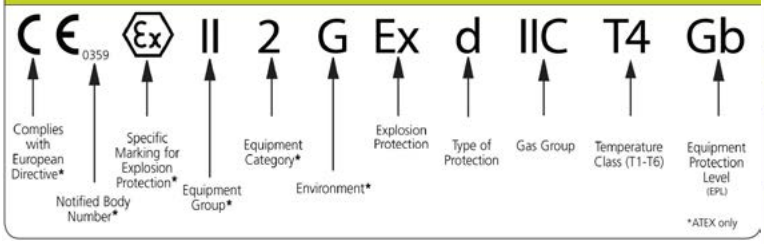
25’ Conductive Duct
Conductive Saddle Vent®
Conductive Duct Canister with 6’ of Conductive Duct
Conductive 90° Elbow
Universal Mount

SVF-10X220
10” ATEX FAN
SV-CUPCND
VENTILATION KIT

6’ and 15’ of Conductive Duct
Conductive Saddle Vent®
Duct Canister
Conductive 90° Elbow
Universal Mount

Hazardous Location & Explosive Atmospheres
Guide to Equipment Certification Requirements

Typical ATEX and IECEx Marking



Ingress Protection Codes [IEC 60529]

First Number (protect from solid bodies)		Second Number (protect from water)	
0	No Protection	0	No protection
1	Objects > 50mm	1	Vertical drip
2	Objects > 12.5mm	2	Angled drip
3	Objects > 2.5mm	3	Spraying
4	Objects > 1.0mm	4	Splashing
5	Dust-Protected	5	Jetting
6	Dust-Tight	6	Powerful jetting
		7	Temporary immersion
		8	Continuous immersion
		9	High pressure and temperature water jet

Atmosphere Groups [ATEX & IECEx]

Group	Environment	Location	Typical Substance
I	Gases, Vapors and Mists	Coal Mining	Methane (Fire damp)
IIA		Surface and Other Locations	Methane, Propane, etc.
IIB			Ethylene
IIC			Hydrogen, Acetylene, etc.
IIIA	Combustible Dusts	Surface and Other Locations	Combustible flyings
IIIB			Non-conductive
IIIC			Conductive

Equipment Groups [ATEX]

Equipment Group	ATEX Equipment Category	Atmosphere	Equipment Protection Level (EPL)	Required Protection Performance & Operation
I (Mines with Firedamp)	M1	Methane & Dust	Very High Ma	Two faults, Remain energized and functioning
I (Mines with Firedamp)	M2	Methane & Dust	High Mb	Severe normal operation, De-energize in exp. atm.
II (All Other Areas)	1G, 1D	Gas, Vapor, Mist, Dust	Very High	Two faults
II (All Other areas)	2G, 2D	Gas, Vapor, Mist, Dust	High	One fault
II (All Other Areas)	3G, 3D	Gas, Vapor, Mist, Dust	Low	Normal operation

Equipment Categories & Protection Levels[8]

ATEX Category	Equipment Protection Levels	Typical Equipment Zone Suitability
1 G	Ga	Suitable for Zones 0,1,2
1 D	Da	Suitable for Zones 20,21,22
2 G	Gb	Suitable for Zones 1,2
2 D	Db	Suitable for Zones 21,22
3 G	Gc	Suitable for Zone 2
3 D	Dc	Suitable for Zone 22

ATEX Categories vs. Zones of Use[8]

Equipment Category ATEX 94/9/EC	Zone of Use	
	Gas, Vapors, & Mist	Dust
Category 1	Zone 0, 1 & 2	Zone 20, 21 & 22
Category 2	Zone 1 & 2	Zone 21 & 22
Category 3	Zone 2	Zone 22

Note 8: Unless the explosion protection risk assessment states otherwise.

Protection Concepts [ATEX and IECEx]

Type of Protection	Symbol	Typical IEC EPL	Typical Zone(s)	IEC Standard	Basic Concept of Protection
Electrical Equipment for Gases, Vapors and Mists (G)					
General Requirements	-	-	0,1,2	IEC 60079-0	
Optical Radiation	Op pr Op sh Op is	Gb Ga Ga	1,2 0,1,2 0,1,2	IEC 60079-28 IEC 60079-28 IEC 60079-28	Inherently safe protected by shutdown
Increased Safety Type 'n' (Non-Sparking)	e nA	Gb Gc	1,2 2	IEC 60079-7 IEC 60079-15	No arcs, sparks or hot surfaces Enclosure IP54 or better
Flame-proof	d	Gb	1,2	IEC 60079-1	Contain the explosion, quench the flame
Type 'n' (Enclosed Break)	nC	Gc	2	IEC 60079-15	
Quartz/Sand Filled	q	Gb	1,2	IEC 60079-5	Quench the flame
Intrinsic Safety	ia ib ic	Ga Gb Gc	0,1,2 1,2 2	IEC 60079-11 IEC 60079-11 IEC 60079-11	Limit the energy of sparks and surface temperatures
Purged / Pressurized	px py pz	Gb Gb Gc	1,2 1,2 2	IEC 60079-2 IEC 60079-2 IEC 60079-2	Keep the flammable gas out
Type 'n' (Sealing & Hermetically Sealed)	nC	Gc	2	IEC 60079-15	
Type 'n' (Restricted Breathing)	nR	Gc	2	IEC 60079-15	
Encapsulation	ma mb mc	Ga Gb Gc	0,1,2 1,2 2	IEC 60079-18 IEC 60079-18 IEC 60079-18	
Oil Immersion	o	Gb	1,2	IEC 60079-6	
Electrical Equipment for Combustible Dusts (D)					
General Requirements	-	-	20,21,22	IEC 60079-0	
Enclosure	ta tb tc	Da Db Dc	20 21 22	IEC 60079-31	Standard protection for dusts, rugged tight enclosure
Intrinsic Safety	ia ib ic	Da Db Dc	20 21 22	IEC 60079-11	Similar to enclosure, but with some relaxations if circuit inside is intrinsically safe
Encapsulation	ma mb mc	Da Db Dc	20 21 22	IEC 60079-18	Protection by encapsulation of incendive parts
Pressurized	pD	Db Dc	21,22 22	IEC 61241-4	Protection by pressurization of enclosure
Non-Electrical Equipment					
General Requirements	-	-	0,1,2, 20,21,22	EN 13463-1	Low potential energy
Flow Restricted Enclosure Flame-proof Enclosure	fr d	- -	2,22 1,2,21,22	EN 13463-2 EN 13463-3	Relies on tight seals, closely matched joints and tough enclosures to restrict the breathing of the enclosure
Constructional Safety	c	-	0,1,2, 20,21,22	EN 13463-5	Ignition hazards eliminated by good engineering methods
Control of Ignition Sources	b	-	0,1,2, 20,21,22	EN 13463-6	Control equipment fitted to detect malfunctions
Purged / Pressurized	p	-	1,2, 21,22	EN 60079-2 EN 61241-4	Enclosure is purged and pressurized to prevent ignition sources from arising
Liquid Immersion	k	-	0,1,2, 20,21,22	EN 13463-8	Enclosure uses liquid to prevent contact with explosive atmosphere

EXAMINATION CERTIFICATE

Intertek

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:** ITS14ATEX17992X

4. **Equipment or Protective System:** Hazardous location ventilation fans

5. **Manufacturer:** Air Systems International Inc.

6. **Address:** 829 Juniper Crescent
Chesapeake, VA 23320, 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. Intertek Testing and Certification Limited, notified body number 0359 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 Intertek Report 1010249591CRT-002a dated November 23 2015, 1010249591CRT-002b, -002c dated November 19, 2014, 1010249591CRT-002d, -002e, -002f dated February 3 2015 and 1010249591CRT-003a, -003b and -003c dated November 7, 2014.

9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with standards EN 60079-0: 2009, EN 60079-1: 2007, EN 14986: 2007, EN 13463-1: 2009 and EN 13463-5: 2011 except in respect of those requirements referred to at item 16 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, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. 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 G c
   Ex d IIB T6 Gb
   -20°C ≤ Ta ≤ 40°C

Richard J. Smith
Certification Officer
23 November 2015

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