

# 1 TYPE EXAMINATION CERTIFICATE



2 Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - 2014/34/EU

3 Type Examination Certificate No: FM13ATEX0056X

4 Equipment or protective system: FSV430 / 450 VortexMaster and FSS430 / 450 SwirlMaster  
(Type Reference and Name)

5 Name of Applicant: ABB Engineering (Shanghai) Ltd

6 Address of Applicant: No 4528, KangXin Highway,  
KangQiao Town,  
Pudong New District,  
Shanghai. 201319  
P.R. China

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

8 FM Approvals Europe Ltd. certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3048130 dated 27<sup>th</sup> February 2014 and 3048489 dated 04<sup>th</sup> March 2014

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0:2012+A11:2013, EN 60079-15:2010, EN 60079-11:2012, EN 60079-31:2014 and  
EN 60529:1991+A1:2000+A2:2013

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

11 This Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. 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:



II 3 G Ex nA IIC T6...T4 Gc Ta = -40 °C to \*

II 3 G Ex ic IIC T6...T4 Gc Ta = -40 °C to \*

II 3 D Ex tc IIIC T85°C Dc Ta = -40 °C to 75 °C

\*see Description

  
Digitally signed by Damien  
Mc Ardle  
DN: cn=Damien Mc Ardle,  
o=FM Approvals, ou=FM  
Approvals Europe Ltd,  
email=damien.mcardle@fm  
approvals.com, c=IE  
Date: 2019.06.18 21:17:18  
+01'00'

**Damien Mc Ardle**  
Certification Manager, FM Approvals Europe Ltd.

Issue date: 18<sup>th</sup> June 2019

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# **SCHEDULE**

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## **13 Description of Equipment or Protective System:**

The FSV430 / 450 VortexMaster and FSS430 / 450 SwirlMaster are used for measuring the flowrate of gasses, steam, and liquids. An option is available for direct temperature measurements. These temperature measurements can be used to monitor the fluid temperature or for the measurement of saturated steam in mass units. These products utilize piezo technology to measure flow.

The flow measuring system is designed as a 2-wire instrument with the supply power and the current output signal (4-20 mA) using the same pair of connection leads. A separate contact output can be assigned for any one of the following functions: Pulse output, minimum, or maximum alarm (temperature or flow rate or system alarm). In addition to the HART communications configuration an optional Modbus, Fieldbus and Profibus communications option is available

The electronics enclosure is mounted directly to the flowmeter. This enclosure has a tool secured access door. The enclosure is an epoxy painted aluminium and has the ability for conduit connections. The converter can be mounted remotely from the flowmeter when it is installed in a location difficult to access or when the ambient conditions at the flowmeter are extreme. A special cable is utilized to interconnect the flowmeter and the converter. After the installation has been completed, the cable can be cut to the length required to reach the remote flowmeter.

The enclosure has a rating of IP66/67.

### Operation Temperature Ranges:

The minimum ambient operating temperature range of the SwirlMaster or VortexMaster is -40 °C.

The maximum ambient operating temperature range for use in dust is 75 °C.

The maximum ambient operating temperature range for use in gas is shown in the following tables.

Process temperature range is -200 °C to 400 °C.

### Electrical data:

U = 42 V

I = 4...20 mA

### **FSV/FSS 430/450 without Display option**

| Temperature Class | Ambient Temperature | Maximum fluid temperature |
|-------------------|---------------------|---------------------------|
| T4                | ≤ 85 °C             | 90 °C                     |
|                   | ≤ 82 °C             | 180 °C                    |
|                   | ≤ 81 °C             | 280 °C                    |
|                   | ≤ 79 °C             | 400 °C                    |
| T4                | ≤ 70 °C             | 90 °C                     |
|                   | ≤ 67 °C             | 180 °C                    |
|                   | ≤ 66 °C             | 280 °C                    |
|                   | ≤ 64 °C             | 400 °C                    |
| T5                | ≤ 56 °C             | 90 °C                     |
|                   | ≤ 53 °C             | 180 °C                    |
|                   | ≤ 52 °C             | 280 °C                    |
|                   | ≤ 50 °C             | 400 °C                    |
| T6                | ≤ 44 °C             | 90 °C                     |
|                   | ≤ 41 °C             | 180 °C                    |
|                   | ≤ 40 °C             | 280 °C                    |
|                   | ≤ 38 °C             | 400 °C                    |

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## FSV/FSS 430/450 with Display option L1

| Temperature Class | Ambient Temperature | Maximum fluid temperature |
|-------------------|---------------------|---------------------------|
| T4                | ≤ 85 °C             | 90 °C                     |
|                   | ≤ 82 °C             | 180 °C                    |
|                   | ≤ 81 °C             | 280 °C                    |
|                   | ≤ 79 °C             | 400 °C                    |
| T4                | ≤ 70 °C             | 90 °C                     |
|                   | ≤ 67 °C             | 180 °C                    |
|                   | ≤ 66 °C             | 280 °C                    |
|                   | ≤ 64 °C             | 400 °C                    |
| T5                | ≤ 40 °C             | 90 °C                     |
|                   | ≤ 37 °C             | 180 °C                    |
|                   | ≤ 36 °C             | 280 °C                    |
|                   | ≤ 34 °C             | 400 °C                    |
| T6                | ≤ 40 °C             | 90 °C                     |
|                   | ≤ 37 °C             | 180 °C                    |
|                   | ≤ 36 °C             | 280 °C                    |
|                   | ≤ 34 °C             | 400 °C                    |

## FSV/FSS 430/450 with Display option L2

| Temperature Class | Ambient Temperature | Maximum fluid temperature |
|-------------------|---------------------|---------------------------|
| T4                | ≤ 60 °C             | 90 °C                     |
|                   | ≤ 57 °C             | 180 °C                    |
|                   | ≤ 56 °C             | 280 °C                    |
|                   | ≤ 54 °C             | 400 °C                    |
| T4                | ≤ 60 °C             | 90 °C                     |
|                   | ≤ 57 °C             | 180 °C                    |
|                   | ≤ 56 °C             | 280 °C                    |
|                   | ≤ 54 °C             | 400 °C                    |
| T5                | ≤ 56 °C             | 90 °C                     |
|                   | ≤ 53 °C             | 180 °C                    |
|                   | ≤ 52 °C             | 280 °C                    |
|                   | ≤ 50 °C             | 400 °C                    |
| T6                | ≤ 44 °C             | 90 °C                     |
|                   | ≤ 41 °C             | 180 °C                    |
|                   | ≤ 40 °C             | 280 °C                    |
|                   | ≤ 38 °C             | 400 °C                    |

### FSV430abcdefgh – Vortex Flow Transmitter – Integral Sensor

a = Explosion Protection Certification; B1, B8 or B9.

b = System Design; C1 or C2.

c = Process Connection Type / Meter Size / Connection Size: W025R0, W040R0, W050R0, W080R0, W100R0, W150R0, F015R0, F015R2, F015R4, F025R0, F025R2, F025R3, F040R0, F040R1, F040R3, F050R0, F050R2, F050R3, F080R0, F080R1, F080R3, F100R0, F100R2, F100R4, F150R0, F150R2, F150R3, F200R0, F200R1, F200R2, F250R0, F250R1 or F300R0.

d = Pressure Rating; D1, D2, D3, D4, D5, D6, D7, E1, E2, E3, A1, A3, A6, A7, A8, A9, J0, J1, J2, J3 or

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J4.

e = Temperature Range of Measuring Medium; A1, B1 or C.

f = Housing Material / Cable Glands; A1, B1, S1 or T1.

g = Output Signal; F1\*\*\*, H1, H5, M4\*\* or P1\*\*\*.

h = Additional Options; (Any of the following) C\*, CG\*, EG\*, G1, G2, G4, L1, L2, M\*, N\*, P\*, R5, S1, SD\*, SM1, SM2, SM3, SM4, SM5, SM6, SM7, SM8, SP0, SP1, SP2, SP3, TC1, TCC, TCZ, TCS, TA4, TA5, U1, U2, NL\*, NG\* and/or NS\*.

\* = Any single character – Not relevant to safety.

\*\* = For Ex nA; Ex tc versions only.

\*\*\* = For Ex nA; Ex tc and Ex ic versions only.

## **FSV430abcdefgh – Vortex Flow Transmitter – Remote Sensor**

a = Explosion Protection Certification; B1, B8 or B9.

b = System Design; R1 or R2.

c = Process Connection Type / Meter Size / Connection Size; W025R0, W040R0, W050R0, W080R0, W100R0, W150R0, F015R0, F015R2, F015R4, F025R0, F025R2, F025R3, F040R0, F040R1, F040R3, F050R0, F050R2, F050R3, F080R0, F080R1, F080R3, F100R0, F100R2, F100R4, F150R0, F150R2, F150R3, F200R0, F200R1, F200R2, F250R0, F250R1 or F300R0.

d = Pressure Rating; D1, D2, D3, D4, D5, D6, D7, E1, E2, E3, A1, A3, A6, A7, A8, A9, J0, J1, J2, J3 or J4.

e = Temperature Range of Measuring Medium; A1, B1 or C1.

f = Housing Material / Cable Glands; A1, B1, S1 or T1.

g = Output Signal; F1\*\*\*, H1, H5, M4\*\* or P1\*\*\*.

h = Additional Options; (Any of the following) C\*, CG\*, EG\*, G1, G2, G4, L1, L2, M\*, N\*, P\*, R5, S1, SD\*, SC2, SC4, SC6, SM1, SM2, SM3, SM4, SM5, SM6, SM7, SM8, SP0, SP1, SP2, SP3, TC1, TCC, TCZ, TCS, TA4, TA5, U1, U2, NL\*, NG\* and/or NS\*.

\* = Any single character – Not relevant to safety.

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\*\*\* = For Ex nA; Ex tc and Ex ic versions only.

## **FSS430abcdefgh – Swirl Flow Transmitter – Integral Sensor**

a = Explosion Protection Certification; B1, B8 or B9.

b = System Design; C1 or C2.

c = Process Connection Type / Meter Size / Connection Size; F015R0, F020R0, F025R0, F032R0, F040R0, F050R0, F080R0, F100R0, F150R0, F200R0, F300R0 or F400R0.

d = Pressure Rating; D1, D2, D3, D4, D5, D6, D7, E1, E2, E3, A1, A3, A6, A7, A8, A9, J0, J1, J2, J3 or J4.

e = Temperature Range of Measuring Medium; A1, B1 or C1.

f = Housing Material / Cable Glands; A1, B1, S1 or T1.

g = Output Signal; F1\*\*\*, H1, H5, M4\*\* or P1\*\*\*.

h = Additional Options; (Any of the following) C\*, CG\*, EG\*, G1, G2, G4, L1, L2, M\*, N\*, P\*, R5, S1, SD\*, SM1, SM2, SM3, SM4, SM5, SM6, SM7, SM8, SP0, SP1, SP2, SP3, TC1, TCC, TCZ, TCS, TA4, TA5, U1, U2, NL\*, NG\* and/or NS\*.

\* = Any single character – Not relevant to safety.

\*\* = For Ex nA; Ex tc versions only.

\*\*\* = For Ex nA; Ex tc and Ex ic versions only.

## **FSS430abcdefgh – Swirl Flow Transmitter – Remote Sensor**

a = Explosion Protection Certification; B1, B8 or B9.

b = System Design; R1 or R2.

c = Process Connection Type / Meter Size / Connection Size; F015R0, F020R0, F025R0, F032R0, F040R0, F050R0, F080R0, F100R0, F150R0, F200R0, F300R0 or F400R0.

d = Pressure Rating; D1, D2, D3, D4, D5, D6, D7, E1, E2, E3, A1, A3, A6, A7, A8, A9, J0, J1, J2, J3 or J4.

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e = Temperature Range of Measuring Medium; A1, B1 or C1.

f = Housing Material / Cable Glands; A1, B1, S1 or T1.

g = Output Signal; F1\*\*\*, H1, H5, M4\*\* or P1\*\*\*.

h = Additional Options; (Any of the following) C\*, CG\*, EG\*, G1, G2, G4, L1, L2, M\*, N\*, P\*, R5, S1, SD\*, SM1, SM2, SM3, SM4, SM5, SM6, SM7, SM8, SP0, SP1, SP2, SP3, TC1, TCC, TCZ, TCS, TA4, TA5, U1, U2, NL\*, NG\* and/or NS\*.

\* = Any single character – Not relevant to safety.

\*\* = For Ex nA; Ex tc versions only.

\*\*\* = For Ex nA; Ex tc and Ex ic versions only.

## **FSV450abcdefgh – Intelligent Vortex Flow Transmitter – Integral Sensor**

a = Explosion Protection Certification; B1, B8 or B9.

b = System Design; C1 or C2.

c = Process Connection Type / Meter Size / Connection Size; W025R0, W040R0, W050R0, W080R0, W100R0, W150R0, F015R0, F015R2, F015R4, F025R0, F025R2, F025R3, F040R0, F040R1, F040R3, F050R0, F050R2, F050R3, F080R0, F080R1, F080R3, F100R0, F100R2, F100R4, F150R0, F150R2, F150R3, F200R0, F200R1, F200R2, F250R0, F250R1 or F300R0.

d = Pressure Rating; D1, D2, D3, D4, D5, D6, D7, E1, E2, E3, A1, A3, A6, A7, A8, A9, J0, J1, J2, J3 or J4.

e = Temperature Range of Measuring Medium; A1, B1 or C1.

f = Housing Material / Cable Glands; A1, B1, S1 or T1.

g = Output Signal; F1\*\*\*, H1, H5, M4\*\* or P1\*\*\*.

h = Additional Options; (Any of the following) C\*, CG\*, EG\*, G1, G2, G4, L1, L2, M\*, N\*, P\*, R5, RR S1, SD\*, SM1, SM2, SM3, SM4, SM5, SM6, SM7, SM8, SP0, SP1, SP2, SP3, TC1, TCC, TCZ, TCS, TA4, TA5, U1, U2, NL\*, NG\* and/or NS\*.

\* = Any single character – Not relevant to safety.

\*\* = For Ex nA; Ex tc versions only.

\*\*\* = For Ex nA; Ex tc and Ex ic options only.

## **FSV450abcdefgh – Intelligent Vortex Flow Transmitter – Remote Sensor**

a = Explosion Protection Certification; B1, B8 or B9.

b = System Design; R1 or R2.

c = Process Connection Type / Meter Size / Connection Size; W025R0, W040R0, W050R0, W080R0, W100R0, W150R0, F015R0, F015R2, F015R4, F025R0, F025R2, F025R3, F040R0, F040R1, F040R3, F050R0, F050R2, F050R3, F080R0, F080R1, F080R3, F100R0, F100R2, F100R4, F150R0, F150R2, F150R3, F200R0, F200R1, F200R2, F250R0, F250R1 or F300R0.

d = Pressure Rating; D1, D2, D3, D4, D5, D6, D7, E1, E2, E3, A1, A3, A6, A7, A8, A9, J0, J1, J2, J3 or J4.

e = Temperature Range of Measuring Medium; A1, B1 or C1.

f = Housing Material / Cable Glands; A1, B1, S1 or T1.

g = Output Signal; F1\*\*\*, H1, H5, M4\*\* or P1\*\*\*.

h = Additional Options; (Any of the following) C\*, CG\*, EG\*, G1, G2, G4, L1, L2, M\*, N\*, P\*, R5, RR S1, SD\*, SM1, SM2, SM3, SM4, SM5, SM6, SM7, SM8, SP0, SP1, SP2, SP3, TC1, TCC, TCZ, TCS, TA4, TA5, U1, U2, NL\*, NG\* and/or NS\*.

\* = Any single character – Not relevant to safety.

\*\* = For Ex nA; Ex tc versions only.

\*\*\* = For Ex nA; Ex tc and Ex ic options only.

## **FSS450abcdefgh – Intelligent Swirl Flow Transmitter – Integral Sensor**

a = Explosion Protection Certification; B1, B8 or B9.

b = System Design; C1 or C2.

c = Process Connection Type / Meter Size / Connection Size; F015R0, F020R0, F025R0, F032R0, F040R0, F050R0, F080R0, F100R0, F150R0, F200R0, F300R0 or F400R0.

d = Pressure Rating; D1, D2, D3, D4, D5, D6, D7, E1, E2, E3, A1, A3, A6, A7, A8, A9, J0, J1, J2, J3 or

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e = Temperature Range of Measuring Medium; A1, B1 or C1.

f = Housing Material / Cable Glands; A1, B1, S1 or T1.

g = Output Signal; F1\*\*\*, H1, H5, M4\*\* or P1\*\*\*.

h = Additional Options; (Any of the following) C\*, CG\*, EG\*, G1, G2, G4, L1, L2, M\*, N\*, P\*, R5, RR, S1, SD\*, SM1, SM2, SM3, SM4, SM5, SM6, SM7, SM8, SP0, SP1, SP2, SP3, TC1, TCC, TCS, TCZ, TA4, TA5, U1, U2, NL\*, NG\* and/or NS\*.

\* = Any single character – Not relevant to safety.

\*\* = Ex nA; Ex tc versions only.

\*\*\* = For Ex nA; Ex tc and Ex ic versions only.

## **FSS450abcdefgh – Intelligent Swirl Flow Transmitter – Remote Sensor**

a = Explosion Protection Certification; B1, B8 or B9.

b = System Design; R1 or R2.

c = Process Connection Type / Meter Size / Connection Size; F015R0, F020R0, F025R0, F032R0, F040R0, F050R0, F080R0, F100R0, F150R0, F200R0, F300R0 or F400R0.

d = Pressure Rating; D1, D2, D3, D4, D5, D6, D7, E1, E2, E3, A1, A3, A6, A7, A8, A9, J0, J1, J2, J3 or J4.

e = Temperature Range of Measuring Medium; A1, B1 or C1.

f = Housing Material / Cable Glands; A1, B1, S1 or T1.

g = Output Signal; F1\*\*\*, H1, H5, M4\*\* or P1\*\*\*.

h = Additional Options; (Any of the following) C\*, CG\*, EG\*, G1, G2, G4, L1, L2, M\*, N\*, P\*, R5, RR, S1, SC2, SC4, SC6, SD\*, SM1, SM2, SM3, SM4, SM5, SM6, SM7, SM8, SP0, SP1, SP2, SP3, TC1, TCC, TCZ, TCS, TCZ, TA4, TA5, U1, U2, NL\*, NG\* and/or NS\*.

\* = Any single character – Not relevant to safety.

\*\* = For Ex nA; Ex tc versions only.

\*\*\* = For Ex nA; Ex tc and Ex ic versions only.

## **14 Specific Conditions for Safe Use:**

1. When the manufacturer of the equipment has not identified the type of protection on the label, the user shall, on installation, mark the label with the type of protection used.
2. The painted surface of the FSS/FSV may store electrostatic charge and become a source of ignition in applications with a low relative humidity <~30% relative humidity where the painted surface is relatively free of surface contamination such as dirt, dust, or oil. Guidance on protection against the risk of ignition due to electrostatic discharge can be found in PD CLC/TR 60079-32-1 and IEC TS 60079-32-1. Cleaning of the painted surface should only be done with a damp cloth.
3. Provision shall be made external to the equipment, to provide the transient protection device to be set at a level not exceeding 140 % of the peak rated voltage value of 45 V.

## **15 Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

## **16 Test and Assessment Procedure and Conditions:**

This Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

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This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

## **17 Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by FM Approvals Europe Ltd.

## **18 Certificate History**

Details of the supplements to this certificate are described below:

| Date                           | Description   |
|--------------------------------|---|
| 14 <sup>th</sup> March, 2014   | Original issue  |
| 13 <sup>th</sup> June 2014     | <u>Supplement 1:</u><br>Report Reference: 3048130rev140506 dated 06 <sup>th</sup> June 2014.<br>Description of the Change: Addition of alternate manufacturing location.  |
| 13 <sup>th</sup> October 2015  | <u>Supplement 2:</u><br>Report Reference: 3055129 dated 06 <sup>th</sup> October 2015.<br>Description of the Change:<br><ol style="list-style-type: none"><li>1. Update to the Applicant address.</li><li>2. Addition of alternative HMI.</li><li>3. Addition of Modbus communication option.</li><li>4. Update to the Model code for the FSV/ FSS 430 and 450 SwirlMaster.</li></ol>   |
| 06 <sup>th</sup> April 2016    | <u>Supplement 3:</u><br>Report Reference: 3054654 dated 05 <sup>th</sup> April 2016.<br>Description of the Change:<br><ol style="list-style-type: none"><li>1. Addition of extended terminal housing</li><li>2. Addition of enhanced EMC option</li><li>3. Update to include EN 60079-31:2014</li></ol>   |
| 21 <sup>st</sup> February 2017 | <u>Supplement 4:</u><br>Report Reference: 3057516 dated 19 <sup>th</sup> February 2017.<br>Description of the Change:<br><ol style="list-style-type: none"><li>1. Addition of a new high temperature piezo sensor</li><li>2. Optional material carbon steel for pipes and flanges</li><li>3. New graphite sheet gasket material with stainless steel insert for use with the new piezo sensor.</li><li>4. Standards updated.</li><li>5. Certificate updated for new directive</li></ol> |
| 04 <sup>th</sup> May 2018      | <u>Supplement 5:</u><br>Report Reference: RR212763 dated 25 <sup>th</sup> April 2018.<br>Description of the Change: Minor documentation update.   |
| 17 <sup>th</sup> August 2018   | <u>Supplement 6:</u><br>Report Reference: 3061811 dated 31 <sup>st</sup> July 2018.<br>Description of the Change: Addition of PA and FF Communication options.  |
| 26 <sup>th</sup> March 2019    | <u>Supplement 7:</u><br>Description of the Change: Certificate transferred from FM Approvals Ltd., notified body no. 1725, to FM Approvals Europe Ltd., notified body no. 2809.   |
| 18 <sup>th</sup> June 2019     | <u>Supplement 8:</u><br>Report Reference: RR218039 dated 24 <sup>th</sup> May, 2019.<br>Description of the Change: Modification to I/O Board. Addition of alternate manufacturing locations.  |

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# Blueprint Report

**ABB Engineering (Shanghai) Ltd (135922)**

**Class No 3610**

**Original Project I.D. 3048130**

**Certificate I.D. FM13ATEX0056X**

| <u>Drawing No.</u> | <u>Revision Level</u> | <u>Drawing Title</u>   | <u>Last Report</u> |
|--------------------|-----------------------|--|--------------------|
| 3KQR065015U0300    | 02                    | Wire Grounding-Dongwei   | 3061811            |
| 3KQZ207073U0122    | 0                     | TERMINAL BLOCK MULTIVARIABLE VERSION ( DH3119 REV 1)                               | 3048130            |
| 3KQZ207074U0122    | 0                     | TERMINAL BLOCK MULTIVARIABLE HART SURGE PROTECTED ( DH3131 REV 0)                  | 3048130            |
| 3KQZ207074U0123    | 0                     | Terminal Block Hart+Surge-Multivariable  | 3048130            |
| 3KXF065000G0133    | 2014-4-24             | Supplier Control Plan-Ex relevant items for approval                               | 6-May-14           |
| 3KXF065000G0233    | 2014-4-24             | ABB PRU PMU Control plan-Ex item for approval                                      | 6-May-14           |
| 3KXF065016U0122    | 1.2                   | VT5 IO schematic   | 3048130            |
| 3KXF065016U0123    | 1.1                   | VT5 IO PCB Layout  | 3048130            |
| 3KXF065017U0122    | 1.7                   | VT5 Front End schematic  | RR212763           |
| 3KXF065017U0122    | 1.5                   | VT5 Front End Schmatic - Analog  | 3061811            |
| 3KXF065017U0123    | 1.5                   | VT5 Front End PCB Layout   | 3048130            |
| 3KXF065026U0009    | 03                    | FSV/FSS 430/450 REMOTE HOUSING SUB ASSEMBLY  | 3048130            |
| 3KXF065028U0109    | 3                     | FSS/FSV 430/450 Remote Assembly For Ex Certificattion                              | 3055129            |
| 3KXF065028U0109    | 03                    | Remote Assembly for Ex Certification   | 3061811            |
| 3KXF065029U0109    | 2                     | FSV/FSS 430/450 INTEGRAL BASE BOTTOM SUB ASSEMBLY                                  | 3055129            |
| 3KXF065032U0109    | 2                     | FSS/FSV 430/450 Integral verison Assembly For Ex Certificattion                    | 3048130            |
| 3KXF065047U0022    | 1.1                   | VT5 Remote connection board schematic  | 3048130            |
| 3KXF065047U0023    | 1.3                   | VT5 Remote connection board Layout   | 3055129            |
| 3KXF065062U0009    | 1                     | VT5 Remote connection board Assembly   | 3048130            |
| 3KXF065062U0121    | 1                     | VT5 Remote Connection 2 BOM  | 3048130            |
| 3KXF065062U0221    | 1.1                   | VT5 Remote Connection 3 BOM  | 3048130            |
| 3KXF065062U0321    | 1                     | VT5 Remote Connection 1 BOM  | 3048130            |
| 3KXF065063U0109    | 1.1                   | VT5 IO Assembly  | 3048130            |
| 3KXF065063U0121    | 1.4                   | VT5 IO BOM   | 3048130            |
| 3KXF065064U0109    | 1.3                   | VT5 Front End Assembly   | 3048130            |
| 3KXF065064U0121    | 1.8                   | BOM of VT5 Front end   | RR212763           |
| 3KXF065081U0009    | 3                     | VT5 Remote Housing Sub-Asm, FOR NON-FLAMEPROOF CERTIFICATION                       | 3048130            |
| 3KXF065090U0109    | 2                     | FSV/FSS 430/450 Terminal Block sub-asy, 9 termianls, Without surge protector, hart | 3055129            |
| 3KXF065091U0109    | 2                     | FSV/FSS 430/450 Terminal block sub-asy, 9 termianls, With surge protector, hart    | 3055129            |
| 3KXF065097U0109    | 2                     | FSV/FSS 430/450 Terminal Block sub-asy, 9 terminals for remote connection          | 3055129            |
| 3KXF065124U0109    | 2                     | VT5 INTEGRAL BASE BOTTOM SUB-ASSY, FOR NON-FLAMEPROOF CERTIFICATION                | 3055129            |
| 3KXF065215U0109    | 5                     | Control drawing  | 3054654            |
| 3KXF065215U0109    | 06                    | Control Drawing  | 3061811            |
| 3KXF065279U0121    | 02                    | Communicatio Board MODBUS - VT5 BOM  | 3061811            |
| 3KXF065280U0109    | 0                     | Communication Box Sub-Assembly, MODBUS VT5   | 3055129            |
| 3KXF065282U0109    | 0                     | Terminal block sub-assembly Modbus surge version                                   | 3055129            |
| 3KXF065313U0121    | 0                     | BOM of VT5 MODBUS IO Board   | 3055129            |
| 3KXF065313U0122    | 0                     | VT5 MODBUS IO Board Schematic  | 3055129            |
| 3KXF065313U0123    | 0                     | VT5 MODBUS IO Board Layout   | 3055129            |
| 3KXF065424U0722    | 00                    | 9-Pin Enhanced Terminal Board for VT5 PA/FF  | 3061811            |
| 3KXF065501U0009    | 00                    | Front End & Housing PA/FF  | 3061811            |
| 3KXF300001R2101    | I                     | Product Code   | 3057516            |
| 3KXF300003R4099    | B                     | Safety Manual  | 3048130            |
| 3KXF300003R4401    | F                     | FSV430, FSV450, FSS430, FSS450 SAFETY INSTRUCTIONS                                 | 3057516            |
| 3KXF300004R4801    | A                     | Installation Manual (Extract)  | 3061811            |



|                    |    |   |          |
|--------------------|----|---|----------|
| 3KXP000003U0122    | 0  | Communication Board MODBUS - Multivariable  | 3055129  |
| 3KXP000003U0123    | 1  | Communication Board MODBUS Multivariable T-Flow   | 3055129  |
| 3KZZ000006R2201    | C  | 3KZZ000006R2201-C (March 2014) - BU MP Guidelines for Single Approval Certificate in Multiple Locations.pdf | 6-May-14 |
| 3kxf065032u0109    | 03 | Integral Version Assembly for Ex Certification  | 3061811  |
| AU 3042            | 2  | Part List - COMMON HMI : Type B   | 3055129  |
| AU 3048            | 2  | Display "Type B" Assembly   | 3055129  |
| DH 3084            | 2  | Common HMI : Type B   | 3055129  |
| DH 3091            | 2  | Common HMI : Type B   | 3055129  |
| DH 3137            | 1  | Terminal Block MODBUS Surge version   | 3055129  |
| DH 3138            | 3  | MILE 2 Series: Terminal Block Modbus + Surge  | 3055129  |
| DH3133             | 00 | Terminal Block Multivariable Surge Protected  | 3061811  |
| IECEX FME 13.0001U | 1  | Component Certificate 2WCTW   | 3048130  |
| IECEX FME17.0002U  | 01 | IECEX Component Certificate for PA/FF   | 3061811  |
| WDM-10-A0214       | 1  | Piezo-sensor  | 3048130  |