

**ThyssenKrupp**

Uhde Shedden Australia Pty Ltd

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By Mary Pantalleresco at 9:12 am, Aug 26, 2014

PROJECT: Santos CO2 Removal & Utilities Expansion

(VENDOR'S DOCUMENT COVERSHEET)

DOCUMENT TITLE	Equipment Hazardous Area Certificate
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TOTAL No. OF PAGES	9
VENDOR'S ORDER No.	

(FOR INTERNAL USE ONLY)

VENDOR'S OWN DOCUMENT No.	REV	Seq	Discipline	Int	Sign	Date Reviewed
IECEX CSA 04.004X DVC			Project Manager			
			Project Engineer			
			Process Eng			
			Mech Eng			
			Elect Eng			
			Inst Eng	JDJ		
			Civil Struct Eng			
			Piping Eng			
			Mech Design			
			Elect Design			
			Inst Design			
			Civil Struct Design			
			Piping Design			
			QA/QC			
			Santos			
			Return To	MAP		08/09/2014

SUBMITTED FOR : ☐ INFO ☒ REVIEW

PROJECT 25894-01

REVIEW DOES NOT CONSTITUTE ACCEPTANCE OF DESIGN DETAILS, CALCULATIONS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY VENDOR, NOR DOES IT RELIEVE VENDOR FROM FULL COMPLIANCE WITH CONTRACTUAL OR OTHER OBLIGATIONS.

- ☐ 1. REVIEWED AND ACCEPTED. WORK MAY PROCEED
- ☐ 2. PLEASE RESUBMIT DOCUMENT AFTER RESOLVING OUR COMMENTS. WORK MAY PROCEED ON BASIS OF REVIEW COMMENTS
- ☐ 3. NOT ACCEPTABLE . WORK MAY NOT PROCEED SEE COMMUNICATION REF/DATE:
- ☐ 4. NOT REVIEWED, ACCEPTED AS INFORMATION ONLY. WORK MAY PROCEED
- ☐ 5. VOID

NAME: _____ DATE: _____

SIGNATURE: _____

VENDOR**NAME: Emerson Process Management****PACKAGE DESCRIPTION:**

Shutdown / On-Off Valves

TAG NOS:8510-UV-00479, 480, 482
8510-XV-00014, 18, 36, 37,
52, 54, 111, 126, 232, 309**MODEL TYPE/ NOS:**Virgo Trunion mounted
Ball Valve**PURCHASE ORDER NO.**

1040745-(N-014)

VDRL CAT.

K08

SEQUENCE NO.

001

ISSUE

01



PROJECT No. 25894-01 Santos CO2 Removal & Utilities Expansion

VENDOR DOCUMENT TRANSMITTAL

To:	Uhde Shedden Pty Ltd	Vendor Transmittal No.:	EPM-0001
	Level 2, 355 Spencer Street	Date:	21/08/14
	West Melbourne VIC 3003	Contract No.:	1040745
	Australia	Vendor's Name:	Emerson Process Management
Attention:	Rosie Muscat – Document Control	Package Description:	Shutdown / On-Off Valves

UHDE SHEDDEN DOCUMENT NO.			DOCUMENT TITLE	VENDOR'S DOCUMENT NO.	VENDOR REV NO.	NOTES:
VDRL Category	Sequence No	Issue No. (Rev no)				

USAPL Document Control Acknowledgement of Receipt

USAPL Comments:

Signature / Date:



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx CSA 04.0004X issue No.: 12

Status: **Current**

Date of Issue: **2014-03-21** Page 1 of 5

Applicant: **Fisher Controls International LLC**
205 South Center Street
PO Box 190
Marshalltown IA 50158
United States of America

Certificate history:

Issue No. 12 (2014-3-21)
Issue No. 11 (2012-12-21)
Issue No. 10 (2012-9-7)
Issue No. 9 (2012-2-14)
Issue No. 8 (2011-8-30)
Issue No. 7 (2010-10-19)
Issue No. 6 (2010-6-24)
Issue No. 5 (2010-6-3)
Issue No. 4 (2010-3-24)
Issue No. 3 (2009-10-8)
Issue No. 2 (2009-3-26)
Issue No. 1 (2005-3-8)

Electrical Apparatus: **DVC6000 Series Digital Valve Controllers**
Optional accessory:

Type of Protection: **Ex i, Ex n, Ex d**

Marking: **Ex ia IIC T6/T5/T4 (as applicable) Ga**
Ex nC IIC T6/T5 (as applicable) Gc
Ex nA IIC T6/T5/T4 (as applicable) Gc
Ex d IIC T6/T5; Ex d IIC T6/T5/T4 (as applicable) Gb

Approved for issue on behalf of the IECEx
Certification Body:

Dorin Stochitoiu

Position:

Technical Advisor

Signature:
(for printed version)

Date:

March 21, 2014

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 the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

CSA International
178 Rexdale Boulevard
Toronto, Ontario M9W 1R3
Canada
and
1707 - 94th Street
Edmonton, AB T6N 1E6
Canada





IECEx Certificate of Conformity

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Manufacturer: **Fisher Controls International LLC**
205 South Center Street
PO Box 190
Marshalltown IA 50158
United States of America

Additional Manufacturing location
(s):

**Emerson Process
Management Asia Pacific
Pte Ltd**
1 Pandan Crescent
Singapore, 128 461
Singapore

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 electrical apparatus 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 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2007-04 Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15 : 2010 Edition: 4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"

This Certificate does not indicate compliance with electrical 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

IECEx ATR:
CA/CSA/ExTR06.0001/12
CA/CSA/ExTR06.0002/12
CA/CSA/ExTR06.0003/11

File Reference:
CA/CSA/14/TR154490-2694467(1547423)
CA/CSA/14/TR154490-2694467(1547430)
CA/CSA/14/TR154490-2563578(1547448)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The DVC6000 Series are current-to-pressure (I/P) positioners for converting an analog 4 to 20 mA input signal or a digital input signal into a proportional pneumatic output control signal. The unit is capable of using natural gas or air as a supply gas. Model number variations are related to the actuator mounting adaptors, feedback potentiometer orientation or non-contact sensor, and the communication protocol. Model designations are as follows:

Standard Mount DVC6000 Series I/P Positioners, Model DVC60x0xx
Non-contact Mount DVC6000 Series I/P Positioners, Model DVC6200xx
Remote Mount DVC6000 Series Base Unit, Model DVC6005x
Remote Mount DVC6000 Series Feedback Assembly, Model DVC60x5
Remote Mount DVC6000 Series Base Unit, Model DVC6205x
Remote Mount DVC6000 Series Feedback Assembly, Model DVC6215 (non-contact)

CONDITIONS OF CERTIFICATION: YES as shown below:

The following apply to products in accordance with the protection types noted:

Ex ia- Caution re ELECTROSTATIC CHARGES (on plastic cover)

Ex nC; Ex nA; Ex d- Warning: DO NOT OPEN WHILE ENERGIZED- Caution re ELECTROSTATIC CHARGES (on plastic cover)



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EQUIPMENT(continued):

Equipment protection methods / temperature code / Tambient

DVC60x0xx, DVC6200xx, DVC6005x: Ex ia IIC T5 ($T_a \leq 80^\circ\text{C}$) / T6 ($T_a \leq 75^\circ\text{C}$); Ex d IIC T5 ($T_a \leq 80^\circ\text{C}$) / T6 ($T_a \leq 75^\circ\text{C}$); Ex nC IIC T5 ($T_a \leq 80^\circ\text{C}$) / T6 ($T_a \leq 75^\circ\text{C}$); IP66 (HART COMMUNICATION PROTOCOL)
DVC60x0xx, DVC6200xx, DVC6005x: Ex ia IIC T4 ($T_a \leq 80^\circ\text{C}$) / T5 ($T_a \leq 77^\circ\text{C}$) / T6 ($T_a \leq 62^\circ\text{C}$); Ex d IIC T5 ($T_a \leq 80^\circ\text{C}$) / T6 ($T_a \leq 75^\circ\text{C}$); Ex nC IIC T5 ($T_a \leq 80^\circ\text{C}$) / T6 ($T_a \leq 75^\circ\text{C}$); IP66 (FIELD BUS / FISCO / PROFIBUS COMMUNICATION PROTOCOL)

DVC6205: Ex d IIC T5 ($T_a \leq 80^\circ\text{C}$) / T6 ($T_a \leq 75^\circ\text{C}$); Ex nC IIC T5 ($T_a \leq 80^\circ\text{C}$) / T6 ($T_a \leq 75^\circ\text{C}$); IP66
DVC6205F, DVC6205P: Ex ia IIC T4 ($T_a \leq 80^\circ\text{C}$) / T5 ($T_a \leq 77^\circ\text{C}$) / T6 ($T_a \leq 62^\circ\text{C}$); Ex d IIC T5 ($T_a \leq 80^\circ\text{C}$) / T6 ($T_a \leq 75^\circ\text{C}$); Ex nC IIC T5 ($T_a \leq 80^\circ\text{C}$) / T6 ($T_a \leq 75^\circ\text{C}$); IP66

DVC60x5: Ex ia IIC T4 ($T_a \leq 125^\circ\text{C}$) / T5 ($T_a \leq 95^\circ\text{C}$) / T6 ($T_a \leq 80^\circ\text{C}$); Ex d IIC T4 ($T_a \leq 125^\circ\text{C}$) / T5 ($T_a \leq 95^\circ\text{C}$) / T6 ($T_a \leq 80^\circ\text{C}$); Ex nA IIC T4 ($T_a \leq 125^\circ\text{C}$) / T5 ($T_a \leq 95^\circ\text{C}$) / T6 ($T_a \leq 80^\circ\text{C}$); IP66

DVC6215: Ex ia IIC T4 ($T_a \leq 125^\circ\text{C}$) / T5 ($T_a \leq 95^\circ\text{C}$) / T6 ($T_a \leq 80^\circ\text{C}$); Ex d IIC T4 ($T_a \leq 125^\circ\text{C}$) / T5 ($T_a \leq 95^\circ\text{C}$) / T6 ($T_a \leq 80^\circ\text{C}$); Ex nA IIC T4 ($T_a \leq 125^\circ\text{C}$) / T5 ($T_a \leq 95^\circ\text{C}$) / T6 ($T_a \leq 80^\circ\text{C}$); IP66

Electrical parameters for protection type "d" and Type "n"

DVC60x0xx, DVC6200xx, DVC6005x, DVC6205x, DVC6215: 30V max, 20mA

DVC60x5: 10V max, 5mA

Electrical parameters for protection type "i"

DVC60x0, DVC60x0S, DVC6200, DVC6200S: $U_i = 30\text{V}$, $I_i = 226\text{mA}$, $P_i = 1.4\text{W}$, $C_i = 5\text{nF}$, $L_i = 0.55\text{mH}$

DVC60x0, DVC60x0S, DVC6200, DVC6200S (HW2): Loop Terminals: $U_i = 30\text{V}$, $I_i = 130\text{mA}$, $C_i = 15\text{nF}$, $L_i = 0.55\text{mH}$, $P_i = 1\text{W}$; Output Terminals: $U_i = 28\text{V}$, $I_i = 100\text{mA}$, $C_i = 15\text{nF}$, $L_i = 0.5\text{mH}$, $P_i = 1\text{W}$; DVC60x0F, DVC60x0FS, DVC6200F, DVC6200FS, DVC6200P, DVC6200PS: $U_i = 24\text{V}$, $I_i = 380\text{mA}$, $P_i = 1.4\text{W}$, $C_i = 5\text{nF}$, $L_i = 0\text{mH}$; or $U_i = 17.5\text{V}$, $I_i = 380\text{mA}$, $P_i = 5.32\text{W}$, $C_i = 5\text{nF}$, $L_i = 0\text{mH}$

DVC6005: $U_i = 30\text{V}$, $I_i = 226\text{mA}$, $P_i = 1.4\text{W}$, $C_i = 5\text{nF}$, $L_i = 0.55\text{mH}$; $U_o = 9.6\text{V}$, $I_o = 3.5\text{mA}$, $P_o = 8.4\text{mW}$, $C_o = 3.6\mu\text{F}$, $L_o = 100\text{mH}$

DVC6005 (HW2): Loop Terminals: $U_i = 30\text{V}$, $I_i = 130\text{mA}$, $C_i = 15\text{nF}$, $L_i = 0.55\text{mH}$, $P_i = 1\text{W}$; Output Terminals: $U_i = 28\text{V}$, $I_i = 100\text{mA}$, $C_i = 15\text{nF}$, $L_i = 0.5\text{mH}$, $P_i = 1\text{W}$; Remote Sensor Terminals: $U_o = 30\text{V}$, $I_o = 21.2\text{mA}$, $C_o = 55\text{nF}$, $L_o = 78\text{mH}$, $P_o = 160\text{mW}$

DVC6005F: $U_i = 24\text{V}$, $I_i = 380\text{mA}$, $P_i = 1.4\text{W}$, $C_i = 5\text{nF}$, $L_i = 0\text{mH}$; $U_o = 24\text{V}$, $I_o = 17.5\text{mA}$, $P_o = 105\text{mW}$, $C_o = 121\text{nF}$, $L_o = 100\text{mH}$; or $U_i = 17.5\text{V}$, $I_i = 380\text{mA}$, $P_i = 5.32\text{W}$, $C_i = 5\text{nF}$, $L_i = 0\text{mH}$; $U_o = 24\text{V}$, $I_o = 17.5\text{mA}$, $P_o = 105\text{mW}$, $C_o = 121\text{nF}$, $L_o = 100\text{mH}$

DVC60x5: $U_i = 30\text{V}$, $I_i = 17.5\text{mA}$, $P_i = 105\text{mW}$, $C_i = 0\mu\text{F}$, $L_i = 0\text{mH}$

DVC6205 (HW2): Loop Terminals: $U_i = 30\text{V}$, $I_i = 130\text{mA}$, $C_i = 15\text{nF}$, $L_i = 0.55\text{mH}$, $P_i = 1\text{W}$; Output Terminals: $U_i = 28\text{V}$, $I_i = 100\text{mA}$, $C_i = 15\text{nF}$, $L_i = 0.5\text{mH}$, $P_i = 1\text{W}$; Remote Sensor Terminals: $U_o = 30\text{V}$, $I_o = 21.2\text{mA}$, $C_o = 55\text{nF}$, $L_o = 78\text{mH}$, $P_o = 160\text{mW}$

DVC6205F, DVC6205P: $U_i = 24\text{V}$, $I_i = 380\text{mA}$, $P_i = 1.4\text{W}$, $C_i = 5\text{nF}$, $L_i = 0\text{mH}$; $U_o = 24\text{V}$, $I_o = 44\text{mA}$, $P_o = 0.33\text{W}$, $C_o = 121\text{nF}$, $L_o = 30\text{mH}$; or $U_i = 17.5\text{V}$, $I_i = 380\text{mA}$, $P_i = 5.32\text{W}$, $C_i = 5\text{nF}$, $L_i = 0\text{mH}$; $U_o = 17.5\text{V}$, $I_o = 44\text{mA}$, $P_o = 0.33\text{W}$, $C_o = 121\text{nF}$, $L_o = 30\text{mH}$

DVC6215: $U_i = 30\text{V}$, $I_i = 226\text{mA}$, $P_i = 1.4\text{W}$, $C_i = 50\text{nF}$, $L_i = 0.55\text{mH}$



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

IECEx CSA 04.0004X Issue 2

1.Revised main electronics assembly for DVC6000f and DVC6005f to support Sensor X and LCP100, and to improve noise filtering.

2.Revised terminal board assembly (removed transzorb).

3.Corrected output parameters of DVC6005f.

4.Corrected input parameters of DVC6015, 6025 and 6035 Remote Feedback assemblies.

IECEx CSA 04.0004X Issue 3: Update to alternate construction to interchange inter-compartment flame arrestor design with new slotted pin design

IECEx CSA 04.0004X Issue 4: Addition of Models DVC6200 and DVC6200F

IECEx CSA 04.0004X Issue 5: Addition of Gas group IIC for EX-d protection method, modification to inter-compartment seal and minor drawing clarifications

IECEx CSA 04.0004X Issue 6: Addition of -52° lower ambient rating to models DVC6005x, DVC6005 and DVC6005F

IECEx CSA 04.0004X Issue 7: Addition of Model DVC6200P

IECEx CSA 04.0004X Issue 8: Addition of HW2 Electronics to Models DVC60x0, DVC60x0S and DVC6200 for Ex d method of protection only.

IECEx CSA 04.0004X Issue 9: Addition of a Stainless Steel version of the Model DVC6200x. Addition of Models DVC6205x and DVC6215

IECEx CSA 04.0004X Issue 10: Addition of HW2 Electronics to Models DVC60x0, DVC60x0S and DVC6200 for Ex i and Exn methods of protection. ExTR's: CA/CSAExTR06.0001/10, CA/CSAExTR06.0002/10

IECEx CSA 04.0004X Issue 11: Revision of HW2 Electronics Encapsulation for Ex d, Ex i and Exn methods of protection. Also update of Ex d construction to incorporate all revised drawings from the previous Ex i HW2 construction. ExTR's: CA/CSAExTR06.0001/11, CA/CSAExTR06.0002/11, CA/CSAExTR06.0003/10

IECEx CSA 04.0004X Issue 12:

CA/CSAExTR06.0001/12:

a) Minor modification of the FIELDBUS/PROFIBUS main electronics assembly for improved reliability.b) Minor modification of the HART HW2 main electronics assembly for improved start up sequence.c) Reduction of documents needing to be controlled since the certification drawings already incorporate a significant amount of detail already.d) Submission of relevant gerber files.

CA/CSAExTR06.0002/12:

a) Minor modification of the FIELDBUS/PROFIBUS main electronics assembly for improved reliability.b) Minor modification of the HART HW2 main electronics assembly for improved start up sequence.c) Reduction of documents needing to be controlled since the certification drawings already incorporate a significant amount of detail already.d) Submission of relevant gerber files.

CA/CSAExTR06.0003/11

a) Minor modification of the FIELDBUS/PROFIBUS main electronics assembly for improved reliability.b) Minor modification of the HART HW2 main electronics assembly for improved start up sequence.c) Reduction of documents needing to be controlled since the certification drawings already incorporate a significant amount of detail already.

Related QAR's

Fisher Controls International - GB/BAS/QAR06.0056

Emerson Process Management Asia Pacific Pte Ltd - GB/BAS/QAR06.0078

