



Certificate of compliance VEGASWING 6*.CC

Installation Control diagram GE1638



Document ID: 39638



VEGA

WARNING

DO NOT REPLACE UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS

SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR INTRINSIC SAFETY

1 Certificate



Certificate of Compliance

Certificate: 1226855 (LR 108043)

Master Contract: 153857

Project: 2755084

Date Issued: December 22, 2014

Issued to: Vega Grieshaber KG

Am Hohenstein 113
Schiltach, 77761
Germany
Attention: Nick Ilchovski

The products listed below are eligible to bear the CSA Mark shown



Hossein Saleh

Issued by: Hossein Saleh, P. Eng.

PRODUCTS

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations

Class I, Div. 1, Groups A, B, C and D; Class II, Div. 1 Groups E, F and G; Class III; Encl. Type 4X, IP66, Single Seal, Dual Seal (for housing option "D" only), MWP = 64 bar:
Ex d IIC T5...T1 Gb

VEGASWING 60 SERIES Tuning Fork Sensors - All models have the following temperature ratings:

Process Connection	Temp Adapter	Process Temp	Ambient Temp	T Code
Thread G, NPT, Flange ASME, DIN	no extension	75 °C max	60 °C max	T4
Thread G, NPT, Flange ASME, DIN	no extension	130 °C max	50 °C max	T4
Others	no extension	150 °C max	50 °C max	T3C
All	with extension	100 °C max	60 °C max	T5
All	with extension	200 °C max	55 °C max	T3
All	with extension	250 °C max	50 °C max	T2, T1



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The following describes the permitted electronics and enclosures for the various hazardous location ratings. The model numbers shown may be followed by four other characters to designate 1) switching point, 2) identification label material, 3) cleaning, and 4) language of operating instructions.

- Model VEGASWING 6a.bCdeC. Input Rated 20-253 Vdc or Vac, 50/60 Hz; controls external load 10 to 400 mA.
- Model VEGASWING 6a.bCdeR. Input Rated 20-253 Vac, 50/60 Hz, 8 VA; or 20-72 Vdc, 1.3 W; Relay Output: 250 Vac, 5A, 750 VA; 250 Vdc, 1A, 54W.
- Model VEGASWING 6a.bCdeT. Input Rated 10-55 Vdc, 500 mW; 400 mA; output rated 55 Vdc, 400 mA (max).
- Model VEGASWING 6a.bCdeZ. Input Rated 12-36 Vdc, 4-20 mA.
- Model VEGASWING 6a.bCdeN. Input Rated 8.2 Vdc, 103 mA max.

Where:

a is configuration: 1 or 3

b is protection type: D (Explosion –Proof)

c is process connection: 3 digit alpha code

d is adapter/process temperature: D, G, T, H or X

e is Housing/cable entry: M or U

Notes:

1- Products using Housing code M may also be shipped without cable gland, but the Installation Instructions shall require the use of M20x1.5 cable entry.

2- The suitability of the process seal material for the specific process fluid is the responsibility of the manufacturer.

3- When the equipment is installed, taking into account the effect of the process temperature, particular precautions must be taken to ensure that the ambient temperature of the overall vibration switch assembly is between -40°C to 70°C.

4- During installation of conduits for Cable entry ½-14NPT with taper threads, particular precaution must be taken to ensure that the female threads gauge at +1/2 to 2 “turns large” using L1 plug-gauge.

Class I, Div. 2, Groups A, B, C and D; Class II, Div. 2 Groups E, F and G; Class III; Encl. Type 4X, IP66, Single Seal, Dual Seal (for housing option “D” only), MWP = 64 bar:

VEGASWING 60 SERIES Tuning Fork Sensors - All models have the following temperature ratings:



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Others	no extension	150 °C max	50 °C max	T3C
All	with extension	100 °C max	60 °C max	T5
All	with extension	200 °C max	55 °C max	T3
All	with extension	250 °C max	50 °C max	T2, T1

The following describes the permitted electronics and enclosures for the various hazardous location ratings. The model numbers shown may be followed by four other characters to designate 1) switching point, 2) identification label material, 3) cleaning, and 4) language of operating instructions.

- Model VEGASWING 6a.bCdeC. Input Rated 20-253 Vdc or Vac, 50/60 Hz; controls external load 10 to 400 mA.
- Model VEGASWING 6a.bCdeR. Input Rated 20-250 Vac, 50/60 Hz, 8 VA; or 20-72 Vdc, 1.3 W; Relay Output: 253 Vac, 5A, 750 VA; 250 Vdc, 1A, 54W.
- Model VEGASWING 6a.bCdeT. Input Rated 10-55 Vdc, 500 mW; 400 mA; output rated 55 Vdc, 400 mA (max).
- Model VEGASWING 6a.bCdeZ. Input Rated 11-36 Vdc, 4-20 mA.
- Model VEGASWING 6a.bCdeN. Input Rated 8.2 Vdc, 103 mA max.

Where:

a is configuration: 1 or 3

b is protection type: X (Non-incendive)

c is process connection: 3 digit alpha code

d is adapter/process temperature: D, G, T, H or X

e is Housing/cable entry: A, D, M, N, P, U, V, 8, or 9

Notes:

1. Products using Housing code A, N, P, V, 8, or 9 may also be marked as enclosure type 6P.
2. Products using Housing code M may also be shipped without cable gland, but the Installation Instructions shall require the use of M20x1.5 cable entry.
3. The suitability of the process seal material for the specific process fluid is the responsibility of the manufacturer.



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CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations

**Class I, Div 1, Groups A, B, C and D; Class II, Div 1, Groups E, F and G; Class III; Encl. Type 4X, IP66, Single Seal, Dual Seal (for housing option "D" only), MWP = 64 bar:
Ex ia IIC T5...T1 Ga**

VEGASWING 60 SERIES Tuning Fork Sensors - All models have the following temperature ratings:

Process Connection	Temp Adapter	Process Temp	Ambient Temp	T Code
Thread G, NPT, Flange ASME, DIN	no extension	75 °C max	60 °C max	T4
Thread G, NPT, Flange ASME, DIN	no extension	130 °C max	50 °C max	T4
Others	no extension	150 °C max	50 °C max	T3C
All	with extension	100 °C max	60 °C max	T5
All	with extension	200 °C max	55 °C max	T3
All	with extension	250 °C max	50 °C max	T2, T1

The following describes the permitted electronics and enclosures for the various hazardous location ratings. The model numbers shown may be followed by four other characters to designate 1) switching point, 2) identification label material, 3) cleaning, and 4) language of operating instructions.

- Model VEGASWING 6a.bCdeN. Input Rated 11-31 Vdc, 4-20 mA, I.S. with entity parameters as shown below when installed per Drawing no. GE 1638.

$V_{max}/V_i = 20.0 \text{ V}$

$I_{max}/I_i = 103 \text{ mA}$

$P_i = 0.516 \text{ W}$

$C_i = 2.2 \text{ nF}$

$L_i = 0 \text{ mH}$

For the version with fixed cable, cable capacitance of C_i core/core = 58pF/m and C_i core/screen = 270pF/m is to be considered

For the version with fixed cable, cable inductance of $L_i = 55\mu\text{H/m}$ is to be considered

Where:

a is configuration: 1 or 3

b is protection type: C



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c is process connection: 3 digit alpha code

d is adapter/process temperature: D, G, T, H or X

e is Housing/cable entry: A, D, M, N, P, U, V, 8, or 9

Notes:

1. Products using Housing code A, N, P, V, 8, or 9 may also be marked as enclosure type 6P.
2. Products using Housing code M may also be shipped without cable gland, but the Installation Instructions Manual shall require the use of M20x1.5 cable entry.
3. The suitability of the process seal material for the specific process fluid is the responsibility of the manufacturer.
4. The intrinsically safe circuits are safely electrically isolated from parts that can be earthed.
5. The metallic elements of the vibration level switch models VEGASWING6a.bCdeN are electrically connected to the internal and external earth terminals.

Special Conditions for Safe Use:

1. Some of the surfaces of the VEGASWING 6a.bCdeN with locking screw connections, types AVR60.CA3/4***, ARV-SG63.CA2/3** and ARV-SG63.2/3**, with plastic enclosure or metal enclosure with plastic parts and/or plastic-coated or enameled measuring sensors can be charged electrostatically. A warning label shall point to this danger.
2. When used in a Zone 0 environment, the vibration switches that include aluminum shall be installed in such a way that sparking as a result of impact or friction between aluminum and steel (with the exception of stainless steel if the presence of rust particles can be excluded) will positively be excluded.

Class I, Div 1, Groups A, B, C and D; Class II, Div 1, Groups E, F and G; Class III; Encl. Type 4X, IP66, Single Seal, Dual Seal (for housing option "D" only), MWP = 64 bar:

VEGASWING 60 SERIES Tuning Fork Sensors - All models have the following temperature ratings:

Process Connection	Temp Adapter	Process Temp	Ambient Temp	T Code
Thread G, NPT, Flange ASME, DIN	no extension	75 °C max	60 °C max	T4
Thread G, NPT, Flange ASME, DIN	no extension	130 °C max	50 °C max	T4
Others	no extension	150 °C max	50 °C max	T3C
All	with extension	100 °C max	60 °C max	T5
All	with extension	200 °C max	55 °C max	T3
All	with extension	250 °C max	50 °C max	T2, T1



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The following describes the permitted electronics and enclosures for the various hazardous location ratings.

The model numbers shown may be followed by four other characters to designate 1) switching point, 2) identification label material, 3) cleaning, and 4) language of operating instructions.

- Model 6a.bCdeZ. Input Rated 12-31 Vdc, 4-20 mA, I.S. with entity parameters as shown below when installed per Drawing no. GE 1638. Vmax 31.0 V, Imax 166 mA and $P_i = 0.667$ W, $C_i = 0$ nF, $L_i = 0$ mH.

Where:

a is configuration: 1 or 3

b is protection type: C

c is process connection: 3 digit alpha code

d is adapter/process temperature: D, G, T, H or X

e is Housing/cable entry: A, D, M, N, P, U, V, 8, or 9

Notes:

1. Products using Housing code A, N, P, V, 8, or 9 may also be marked as enclosure type 6P.
2. Products using Housing code M may also be shipped without cable gland, but the Installation Instructions Manual shall require the use of M20x1.5 cable entry.
3. The suitability of the process seal material for the specific process fluid is the responsibility of the manufacturer.



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APPLICABLE REQUIREMENTS

CAN/CSA Standard C22.2 No. 0-10	General Requirements - Canadian Electrical Code, Part II
CAN/CSA Standard C22.2 No. 94-M94 (Reaffirmed 2011)	Special Purpose Enclosures
CSA Standard C22.2 No. 142-M1987 (Reaffirmed 2009)	Process Control Equipment
CSA Standard C22.2 No. 25-1966 (Reaffirmed 2009)	Enclosures for Use in Class II Groups E, F, and G Hazardous Locations
CSA Standard C22.2 No. 30-M1986 (Reaffirmed 2007)	Explosion-Proof Enclosures for Use in Class I Hazardous Locations
CAN/CSA Standard C22.2 No. 157-92 (Including update No. 2, June, 2003)	Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations.
CSA Standard C22.2 No. 213-M1987 (Reaffirmed 2008)	Non-incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
ANSI/ISA 12.27.01-2003	Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids
CAN/CSA-C22.2 No. 60079-0:11	Explosive atmospheres - Part 0: Equipment - General requirements
CAN/CSA-C22.2 No. 60079-1:11	Explosive atmospheres — Part 1: Equipment protection by flameproof enclosures “d”
CAN/CSA-C22.2 No. 60079-11:11	Explosive atmospheres — Part 11: Equipment protection by intrinsic safety “i”



Supplement to Certificate of Compliance

Certificate: 1226855

Master Contract: 153857

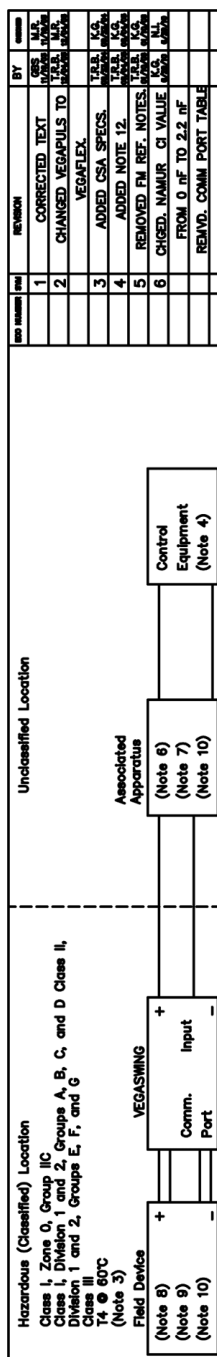
The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
2755084	Dec 22, 2014	Update to include addition of Zone markings, revised drawings, and minor product ratings and nomenclature updates.
2630600	Oct 18, 2013	Update to include revised drawings and manual.
2593542	Jan 16, 2013	Update to replace current VEGASWING 60 series label drawings with versions in a different format.
2542278	Jul 27, 2012	Update to report 1226855 to add a100 bar pressure rating.
2486641	Feb 16, 2012	Replacement of the following Descriptive Documents on File with up to date, current revisions: BV1660, BV1661, GE1633-01, ZT32393, ZT32394, 29223-EN, 29224-EN, 29225-EN, 29226-EN, 29227-EN, 29228-EN, 29229-EN, 29230-EN, 29231-EN, and 29232-EN.
2335923	Aug 26, 2010	Update to report 1226855 to include minor alterations to the electronics for Electromagnetic compatibility reasons (EMC) and to add new/updated drawings.
2145552	Feb 27, 2009	Update report 1226855 to include alternate construction and update descriptive documents.
2057799	Feb 2, 2009	Update Report 1226855 to include Single Seal Marking per ANSI/ISA 12.27.01.
2037848	Oct 22, 2008	Update rpt.1226855 to include modified sensor tube with silicon rope inside tube.
2046946	Jun 13, 2008	Update Report1226855 to include Dual Seal Marking per ISA 12.27.01.
1912213	Sep 18, 2007	Revised Construction
1826862	Mar 6, 2007	Update Report - 1226855 to clarify ratings & components, add enclosure options A & V and add process temperature codes D, G & T.

History

1360998	2002/10/29	Update Report - 1226855 to allow use in Class I, Div 1 and Class II, Div 1 locations.
1226855	2002/01/08	Original Certification of VEGASWING 60 series Models 60R, 60T and 60C for use in Class I, Div 2 locations with explosionproof connections 60ZEX and 60NEX for intrinsically safe applications.



Entity Parameters: ZEX Electronics

Input: Vmax=31V, Imax=166mA, Pi=0.667W, Ch=0nF, L=0mH

Entity Parameters: NEX NAMUR Electronics

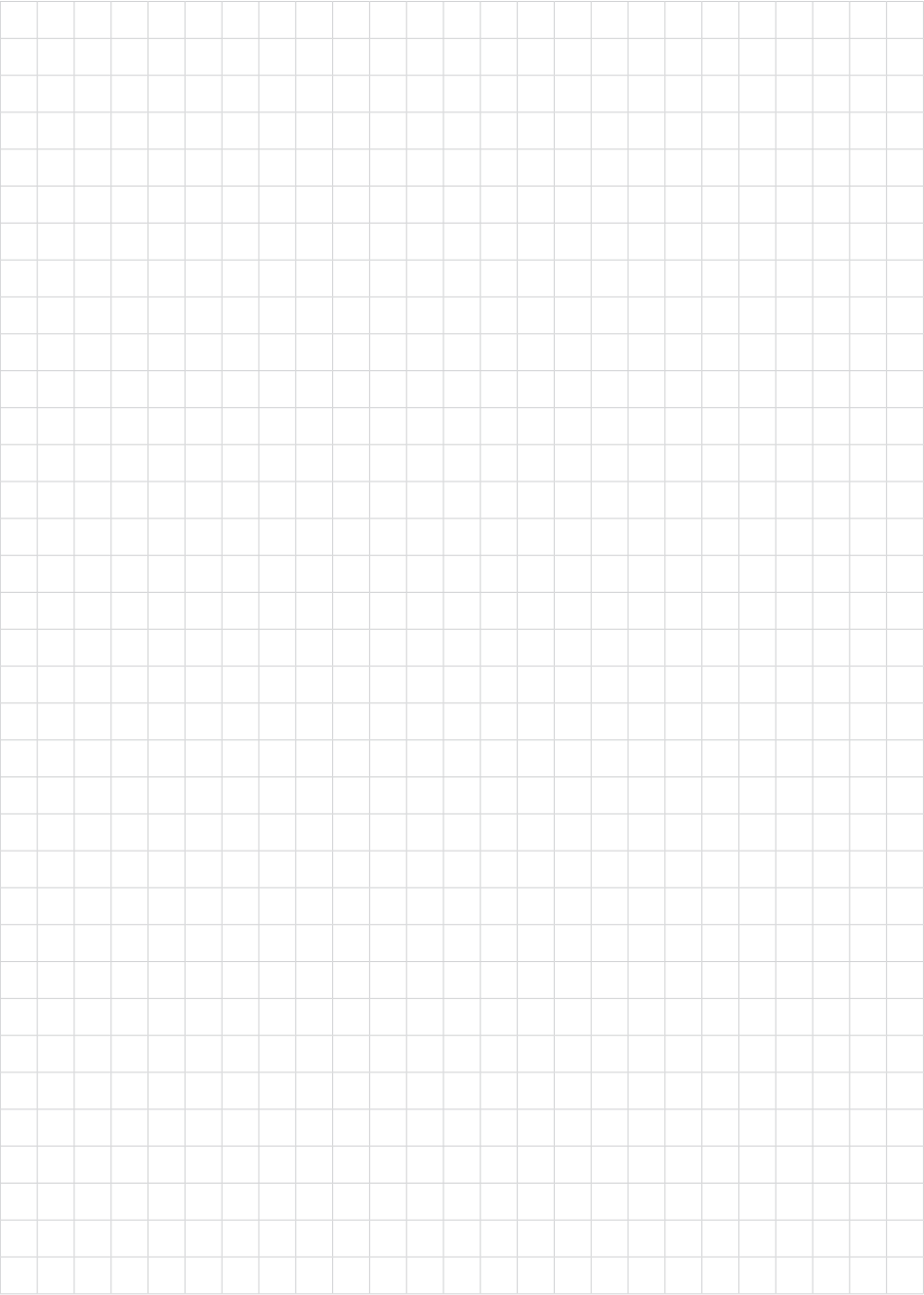
Input: Vmax=20V, Imax=103mA, Pi=0.516W, Ci=2.2nF, L=0mH

REV. NUMBER	REV.	BY	DATE
1	CORRECTED TEXT	GE	10/2013
2	CHANGED VEGAPULS TO VEGAFLEX	GE	12/2013
3	ADDED CSA SPECS	GE	12/2013
4	ADDED NOTE 12	GE	12/2013
5	REMOVED FM REF. NOTES	GE	12/2013
6	CHANGED NAMUR CI VALUE FROM 0 nF TO 2.2 nF	GE	12/2013
	REMOVED COMM PORT TABLE		

Notes:

1. The Intrinsic Safety Entity concept allows the interconnection of two intrinsically safe devices CSA Certified entity parameters not specifically examined in combination as a system when:
 U_0 or V_0 or $V_1 < V_{max}$, or I_0 or $I_1 \leq I_{max}$, C_0 or $C_1 \geq C_1 + C_{cable}$, L_0 or $L_1 \geq L_1 + L_{cable}$, $P_0 \leq P_1$.
2. For Division 2 installations, the Associated Apparatus is not required to be CSA Certified Approved under Entity Concept if the VEGASWING 60 Series is installed in accordance with the Canadian Electrical Code, CSA C22.1 Part 1 Appendix F for division 2 wiring methods excluding Nonincendive field wiring.
3. Dust-tight conduit and shall be used when installed in Class II and Class III environments.
4. Control equipment connected to the Associated Apparatus shall not use or generate more than 250 Vrms or Vdc.
5. Division 1 installations should be in accordance with ANSI/ISA RP12.06.07 installation of Intrinsically Safe Systems for Hazardous (Classified) Locations and the Canadian Electrical Code.
6. For Division 2 installations, the installation of associated Apparatus shall be CSA Certified under Entity Concept.
7. Associated Apparatus manufacturer's installation drawing shall be followed when installing this equipment.
8. The configuration of Field Devices must be CSA Certified under Entity Concept.
9. The Field Device manufacturer's installation drawing shall be followed when installing this equipment.
10. The VEGASWING 60 Series are CSA Certified for Class I, Zone 0 or Class I, Division 1, Hazardous (Classified) Locations.
 Zone 1, and is not suitable for Class I, Zone 0 or Class I, Division 1, Hazardous (Classified) Locations.
 11. No revision to drawing without prior approval by CSA International.
 12. Warning: Substitution of components may impair suitability for hazardous locations.
 13. If the Electrical parameters are unknown, the following values may be used: Cable = 60pF/ft, $L_{cable} = 0.20uH/ft$.
 14. The VEGASWING 60 Series are Approved for Class I, Zone 0, applications. If connecting AEX(b) associated Apparatus or AEX to I.S. Class I, Zone 0 or Class I, Division 1, Hazardous (Classified) Locations.
 15. Normal Operation for Namur Electronics is 4-12.5 VDC; Manufacturer's Suggested Operating Voltage is 8.2 VDC Nominal.

CHART #/M NUMBER	VE203497
REVISION NUMBER	GE1638-CSA
CHART NUMBER	4241 Alford Drive Channahon, Ohio 44809 USA
VEGA	
INSTALLATION CONTROL DIAGRAM:	
VEGASWING 60	
CSA DIVISION 1 INSTRUMENTS	
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DATE	9/25/03
TIME	11:16
BY	B-GE1638



Printing date:

VEGA

All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.

Subject to change without prior notice

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