



EXPLOSION PROTECTION

CERTIFICATE OF CONFORMITY

Cert NO.GYJ20.1025X

This is to certify that the product

Controllers

manufactured by VEGA Grieshaber KG

(Address:Am Hohenstein 113, D-77761 Schiltach, Germany)

which model is VEGAMET 8

Ex marking Ex ic nA nC [ia Ga] IIC T4 Gc, Ex ic nA nC [iaD] IIC T4 Gc

product standard /

drawing number GE4103, GE4104

has been inspected and certified by NEPSI, and that it conforms
to GB 3836.1-2010,GB 3836.4-2010,GB 3836.20-2010,GB 3836.8-2014,
GB 12476.1-2013,GB 12476.4-2010

This Approval shall remain in force until 2025.02.16

Remarks 1.Conditions for safe use are specified in the attachment(s) to this certificate.
2.Model designation is specified in the attachment(s) to this certificate.
3.Intrinsic safety parameters specified in the attachment(s) to this certificate.
4.This certificate also cover the product with the same type that manufactured by
VEGA Americas Inc. (4241 Allendorf Drive, Cincinnati,Ohio 45209, USA) .

Director

National Supervision and Inspection Centre for
Explosion Protection and Safety of Instrumentation

Issued Date 2020.02.17



This Certificate is valid for products compatible with the documents and samples approved by NEPSI.

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防爆合格证

证号: GYJ20.1025X

由 VEGA Grieshaber KG

制造的产品:

(地址: Am Hohenstein 113, D-77761 Schiltach, Germany)

名称 控制器

型号规格 VEGAMET 8 **a b c**

防爆标志 Ex ic nA nC [ia Ga] IIC T4 Gc, Ex ic nA nC [iaD] IIC T4 Gc

产品标准 /

图样编号 GE4103, GE4104

经图样及技术文件的审查和样品检验, 确认上述产品

符合 GB 3836.1-2010、GB 3836.4-2010、GB 3836.20-2010、
GB 3836.8-2014、GB 12476.1-2013、GB 12476.4-2010 标准,

特颁发此证。

本证书有效期: 2020年2月17日至2025年2月16日

备注 1. 安全使用注意事项见本证书附件。

2. 型号规格说明见本证书附件。

3. 本安电气参数见本证书附件。

4. 本证书同时适用于VEGA Americas Inc. (4241 Allendorf Drive, Cincinnati, Ohio 45209, USA) 组
装生产的相同型号产品。

站长

国家级仪器仪表防爆安全监督检验站

颁发日期二〇二〇年二月十七日

本证书仅对与认可文件和样品一致的产品有效。

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国家级仪器仪表防爆安全监督检验站

National Supervision and Inspection Centre for
Explosion Protection and Safety of Instrumentation

(GYJ20.1025X)

(Attachment I)

GYJ20.1025X防爆合格证附件 I

由VEGA Grieshaber KG和VEGA Americas Inc.生产的VEGAMET 8 a b c 型控制器，经国家级
仪器仪表防爆安全监督检验站(NEPSI)检验，符合下列标准：

GB 3836.1-2010 爆炸性环境 第1部分：设备 通用要求

GB 3836.4-2010 爆炸性环境 第4部分：由本质安全型“i”保护的的设备

GB 3836.8-2014 爆炸性环境 第8部分：由“n”型保护的的设备

GB 3836.20-2010 爆炸性环境 第20部分 设备保护级别（EPL）为Ga级的设备

GB 12476.1-2013 可燃性粉尘环境用电气设备 第1部分：通用要求

GB 12476.4-2010 可燃性粉尘环境用电气设备 第4部分：本质安全型“iD”

产品防爆标志为Ex ic nA nC [ia Ga] IIC T4 Gc, Ex ic nA nC [iaD] IIC T4 Gc, 防爆合格证号为
GYJ20.1025X。

产品具体认可型号为：

VEGAMET 8 a b c

a : 4、6;

b : 1、2;

c : 代表与防爆无关的参数。

一、 产品安全使用特殊条件

防爆合格证号后缀“X”代表产品安全使用有特定条件：

1. 产品在爆炸性环境中使用和维护时，须遵循“潜在静电电荷危险-见使用说明书”和“严禁带电断开或连接”的原则。
2. 产品必须安装在符合GB3836.1-2010、GB3836.8-2014的IP54要求的外壳中，方可用于爆炸性危险场所。
3. 产品只能使用在GB/T16935.1-2008污染等级至少2级以上的环境中。

二、 产品使用注意事项

1. 产品使用环境温度范围为：-40℃～+50℃。

2. 产品安全特性如下表：

安全特性	VEGAMET 841	VEGAMET 842	VEGAMET 861	VEGAMET 862
Ex ia的4~20mA传感器输入数量	1	2	1	2
HART通讯	不适用	不适用	是	是
0/4~20mA输出数量	1	2	1	3
继电器输出数量	3	3	4	6
数字输入数量	不适用	不适用	2	4
蓝牙通讯	是	是	是	是
存储卡槽	不适用	不适用	是	是
数据记录用非替换电池	不适用	不适用	是	是

3. VEGAMET 841或VEGAMET 842型控制器电气参数如下：

功能	电气参数
电源（端子91、92）	24V~65VDC(-15%~+10%)； 100V~230VAC(-15%~+10%) 50/60Hz； 对于[Ex ia], Um=253VAC
继电器（端子61~69）	1A AC(cos phi>0.9),250VAC,250VA； 1A DC,60VDC,40W； 对于[Ex ia], Um=253VAC
输出电流 (VEGAMET 841端子41、42或 VEGAMET 842端子41~44)	0/4~20mA, U≤16V, 最大负载500Ω； 对于[Ex ia], Um=253VAC
通讯端口	蓝牙
传感器输入：4~20mA (VEGAMET 841端子1、2或 VEGAMET 842端子1、2、4、5)	Uo≤23.3V、Io≤109.8mA、Po≤639.6mW Ci=0、Li=0
允许最大外部参数 ([Ex ia Ga] IIC)	Lo=0.2mH、Co=120nF Lo=0.5mH、Co=88nF
允许最大外部参数 ([Ex ia Ga] IIB、[Ex iaD])	Lo=0.5mH、Co=580nF Lo=2mH、Co=470nF
允许最大外部参数 ([Ex ia Ga] IIA)	Lo=10mH、Co=770nF
本安与非本安电路之间最高峰值电压	375V
非本安电路最高电压	253V AC

4. VEGAMET 861或VEGAMET 862型控制器电气参数如下：

功能	电气参数
电源（端子91、92）	24V~65VDC(-15%~+10%)；

	100V~230VAC(-15%~+10%) 50/60Hz; 对于[Ex ia], Um=253VAC
继电器 (VEGAMET 861端子61~72 或VEGAMET 862端子61~78)	1A AC(cos phi>0.9), 250VAC,250VA; 1A DC,60VDC,40W; 对于[Ex ia], Um=253VAC
数字输入 (VEGAMET 861端子21~26或 VEGAMET 862端子21~32)	最高电压30V DC 最大电流30mA
输出电流 (VEGAMET 861端子41、42或 VEGAMET 862端子41~46)	0/4~20mA、U≤16V、最大负载500Ω ; 对于[Ex ia], Um=253VAC
通讯端口	蓝牙
传感器输入: 4~20mA或HART (VEGAMET 861端子1、2或 VEGAMET 862端子1、2、4、5)	Uo≤23.3V、 Io≤111.3mA、Po≤648.4mW Ci=0、 Li=0
允许最大外部参数 ([Ex ia Ga] IIC)	Lo=0.2mH、Co=120nF Lo=0.5mH、Co=88nF
允许最大外部参数 ([Ex ia Ga] IIB、[Ex iaD]))	Lo=0.5mH、Co=580nF Lo=2mH、Co=470nF
允许最大外部参数 ([Ex ia Ga] IIA)	Lo=10mH、Co=760nF
本安与非本安电路之间最高峰值电压	375V
非本安电路最高电压	253V AC

5. 用户不得自行更换该产品的零部件，应会同产品制造商共同解决运行中出现的故障，以杜绝损坏现象的发生。

6. 用户在安装、使用和维护产品时，须同时严格遵守产品使用说明书和下列标准：

GB 3836.13-2013 爆炸性环境 第13部分：设备的修理、检修、修复和改造

GB/T 3836.15-2017 爆炸性环境 第15部分：电气装置的设计、选型和安装

GB/T 3836.16-2017 爆炸性环境 第16部分：电气装置的检查与维护

GB/T 3836.18-2017 爆炸性环境 第18部分：本质安全电气系统

GB 3836.20-2010 爆炸性环境 第20部分 设备保护级别（EPL）为Ga级的设备

GB 50257-2014 电气装置安装工程爆炸和火灾危险环境电气装置施工及验收规范

GB 15577-2018 粉尘防爆安全规程

三、 制造厂责任

1. 制造厂必须将上述使用注意事项纳入产品的使用说明书中。

2. 制造厂必须严格按照NEPSI认可的文件资料生产。
3. 涉及产品防爆性能和温度的更改和维修，需提交NEPSI重新检验认可。
4. 产品铭牌中应至少包括下列内容：

a) NEPSI认可标志



b) 产品防爆标志

c) 防爆合格证号

d) 使用环境温度范围

国家级仪器仪表防爆安全监督检验站

二〇三〇年二月十七日



国家级仪器仪表防爆安全监督检验站

National Supervision and Inspection Centre for Explosion Protection and Safety of Instrumentation

(GYJ 20.1025X)

(Attachment I)

Attachment I to GYJ 20.1025X

Typed VEGAMET 8 *a b c* controller manufactured by VEGA Grieshaber KG and VEGA Americas Inc. has been certified National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI).

This product accords with following standards:

GB 3836.1-2010 Explosive atmospheres-Part 1: Equipment-General requirements

GB 3836.4-2010 Explosive atmospheres-Part 4: Equipment protection by intrinsic safety "i"

GB 3836.8-2014 Explosive atmospheres-Part 8: Equipment protection by type of protection "n"

GB 3836.20-2010 Explosive atmospheres-Part 20: Equipment with equipment protection level (EPL) Ga

GB 12476.1-2013 Electrical apparatus for use in the presence of combustible dust – Part 1: General requirements

GB 12476.4-2010 Electrical apparatus for use in the presence of combustible dust – Part 4: Protection by intrinsic safety "iD"

The Ex marking is Ex ic nA nC [ia Ga] IIC T4 Gc, Ex ic nA nC [iaD] IIC T4 Gc. The certificate number is GYJ 20.1025X.

Type designation:

VEGAMET 8 *a b c*

a : 4, 6;

b : 1, 2;

c : no affect to explosion protection.

1. Special condition for safe use

Symbol "X" denotes special condition for safe use:

1.1 For use and maintenance in explosive atmosphere, observe the warning "POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS" and "DO NOT CONNECT OR DISCONNECT WHEN ENERGIZED".

1.2 Installation of the device in a protective housing IP54 in accordance with GB3836.1-2010, GB3836.8-2014 is required.

1.3 The product shall only be used in an area of minimum pollution degree 2 or better, as

defined in GB/T16935.1-2008.

2. Condition for safe use

2.1 Ambient temperature range: $(-40 \sim +50) ^\circ\text{C}$.

2.2 Safety relevant features of the equipment:

Safety relevant features	VEGAMET 841	VEGAMET 842	VEGAMET 861	VEGAMET 862
Number of 4~20mA sensor inputs Ex ia	1	2	1	2
HART communication	N / A	N / A	YES	YES
Number of 0/4~20mA outputs	1	2	1	3
Number of relay outputs	3	3	4	6
Number of digital inputs	N / A	N / A	2	4
Bluetooth communication	YES	YES	YES	YES
Memory card slot(pluggable)	N / A	N / A	YES	YES
Battery for data logging(non-replaceable)	N / A	N / A	YES	YES

2.3 Electrical data of controller typed VEGAMET 841 and VEGAMET 842:

Function	Electrical data
Power supply(terminals 91, 92)	24V~65VDC(-15%~+10%); 100V~230VAC(-15%~+10%) 50/60Hz; Um=253VAC for [Ex ia]only
Relay (terminals 61~69)	1A AC($\cos \phi > 0.9$), 250VAC, 250VA; 1A DC, 60VDC, 40W; Um=253VAC for [Ex ia]only
Output current (terminals 41, 42 for VEGAMET 841 and terminals 41~44 for VEGAMET 842)	0/4~20mA, $U \leq 16\text{V}$, Maximum load=500 Ω ; Um=253VAC for [Ex ia]only
Communication interface	Bluetooth
Sensor input: 4~20mA (terminals 1, 2 for VEGAMET 841 and terminals 1, 2, 4, 5 for VEGAMET 842)	$U_o \leq 23.3\text{V}$, $I_o \leq 109.8\text{mA}$, $P_o \leq 639.6\text{mW}$ $C_i = 0$, $L_i = 0$
Permissible external parameter [Ex ia Ga] IIC	$L_o = 0.2\text{mH}$, $C_o = 120\text{nF}$ $L_o = 0.5\text{mH}$, $C_o = 88\text{nF}$
Permissible external parameter [Ex ia Ga] IIB, [Ex iaD]	$L_o = 0.5\text{mH}$, $C_o = 580\text{nF}$ $L_o = 2\text{mH}$, $C_o = 470\text{nF}$
Permissible external parameter [Ex ia Ga] IIA	$L_o = 10\text{mH}$, $C_o = 770\text{nF}$
Maximum voltage between intrinsic safety circuits and non-intrinsic safety circuits	375V

Maximum voltage of non-intrinsic safety circuits	253V AC
2.4 Electrical data of controller typed VEGAMET 861 and VEGAMET 862:	
Function	Electrical data
Power supply (terminals 91, 92)	24V~65VDC (-15%~+10%); 100V~230VAC (-15%~+10%) 50/60Hz; Um=253VAC for [Ex ia]only
Relay (terminals 61~72 for VEGAMET 861 and terminals 61~78 for VEGAMET 862)	1A AC (cos phi>0.9), 250VAC, 250VA; 1A DC, 60VDC, 40W; Um=253VAC for [Ex ia]only
Digital input (terminals 21~26 for VEGAMET 861 and terminals 21~32 for VEGAMET 862)	Maximum voltage 30VDC Maximum current 30mA
Output current (terminals 41, 42 for VEGAMET 861 and terminals 41~46 for VEGAMET 862)	0/4~20mA, $U \leq 16V$, Maximum load=500Ω; Um=253VAC for [Ex ia]only
Communication interface	Bluetooth
Sensor input: 4~20mA or HART (terminals 1, 2 for VEGAMET 861 and terminals 1,2,4,5 for VEGAMET 862)	$U_o \leq 23.3V$, $I_o \leq 111.3mA$, $P_o \leq 648.4mW$ $C_i=0$, $L_i=0$
Permissible external parameter [Ex ia Ga] IIC	$L_o=0.2mH$, $C_o=120nF$ $L_o=0.5mH$, $C_o=88nF$
Permissible external parameter [Ex ia Ga] IIB, [Ex iaD]	$L_o=0.5mH$, $C_o=580nF$ $L_o=2mH$, $C_o=470nF$
Permissible external parameter [Ex ia Ga] IIA	$L_o=10mH$, $C_o=760nF$
Maximum voltage between intrinsic safety circuits and non-intrinsic safety circuits	375V
Maximum voltage of non-intrinsic safety circuits	253V AC

2.5 The user shall not change the configuration in order to maintain/ensure the explosion protection performance of the equipment.

2.6 For installation, use and maintenance of the product, the end user shall observe the instruction manual and the following standards:

GB 3836.13-2013 Electrical atmospheres Part 13: Equipment repair, overhaul and reclamation

GB/T 3836.15-2017 Explosive atmospheres-Part 15: Electrical installations design, selection and erection

GB/T 3836.16-2017 Explosive atmospheres-Part 16: Electrical installations inspection and maintenance

GB/T 3836.18-2017 Explosive atmospheres-Part 18: Intrinsically safe electrical systems

GB 3836.20-2010 Explosive atmospheres-Part 20: Equipment with equipment protection level (EPL) Ga

GB 50257:2014 Code for construction and acceptance of electric equipment on fire and explosion hazard electrical equipment installation engineering

GB 15577-2018 Safety regulations for dust explosion prevention and protection

3. Manufacturer's Responsibility

3.1 Special condition for safe use and condition for safe use specified above should be included in the instruction manual.

3.2 Manufacturing should be done according to the documentation approved by NEPSI.

3.3 Any modification with influence on the type of protection should be submitted to NEPSI before application.

3.4 Following items should be added to the nameplate

- a) NEPSI logo 
- b) Ex marking
- c) Number of certificate
- d) Ambient temperature range

National Supervision and Inspection Center
for Explosion Protection and Safety of Instrumentation
February 17th, 2020

