

# (1) EU-TYPE EXAMINATION CERTIFICATE



(2) Equipment and Protective Systems intended for use in  
Potentially Explosive Atmosphere - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number

**TÜV 19 ATEX 8341 X**

Issue: 00

(4) Equipment: **80G Radar Level Instrument Type GDRD8X Series**

(5) Manufacturer: **Beijing GODA Instruments Co., Ltd.**

(6) Address: **Hongfu Enterprise Incubation Yard10, No.2 Workshop 2-4.  
ChangpingDistrict,Beijing,P.R. China.**

(7) This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The TÜV Rheinland Zertifizierungsstelle für Explosionsschutz of TÜV Rheinland Industrie Service GmbH, Notified Body No. 0035 in accordance with Article 21 of the Council Directive 2014/34/EU of 26<sup>th</sup> February 2014, certifies this product which 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 atmosphere, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report GC/Ex8341.00/19

(9) Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

**EN 60079-0:2018**

**EN 60079-11:2012**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and specification for construction of the equipment or protective system. It does not cover the process for actual manufacture or supply of the equipment or protective system, for which further requirements of the directive are applicable.

(12) The marking of the equipment shall include the following:



**II 1 G Ex ia IIC T6...T2 Ga**  
**II 1 D Ex ia IIIC T85°C...T300°C Da**



Cologne, 2020-09-30

This EU-Type Examination Certificate without signature and stamp shall not be valid.  
This EU-Type Examination Certificate may be circulated only without alteration. Extracts or alterations are subject to approval by the  
TÜV Rheinland Industrie Service GmbH TÜV Rheinland Group Am Grauen Stein 51105 Köln  
Tel. +49 (0) 221 806-0 Fax. + 49 (0) 221 806 114

(13) Annex

(14) **EU Type Examination Certificate**  
**TÜV 19 ATEX 8341 X** Issue: 00

(15) Description of equipment

15.1 Equipment and type:

GDRD8X Series radar level instrument.

15.2 Description / Details of Change

General product information:

GDRD8X Series radar level instrument.

X could be 2, 3, 7 and 9 to represent different application. 2 and 3 is for liquid application; 7 is for solid application; 9 is for marine application.

The final equipment is the combination of Mainframe and Antenna.

Only the mainframe construction and Antenna setup are little bit different among the models.

Take Sheets of Mainframe and Antenna for detail, construction and material difference are listed in user manual.

The lens on the Antenna of 83 and 89 are made of PTFE. The lens on the Antenna of 82 are made of PTFE and FEP. The lens on the Antenna of 87 are made of PTFE and PEEK. The main circuit in all models are same, only little difference because of different interface (RS485 and 4-20mA).

GDRD8X Series radar level instrument are designed and constructed with type of protection "ia" for gas group IIC and dust group IIIC. Ex marking:



II 1 G Ex ia IIC T6...T2 Ga

II 1 D Ex ia IIIC T85°C...T300°C Da

Type code:

**GDRD8X-(1)(2)(3(4)(5)(6)(7)(8)(9) (X standards for 2, 3, 7, and 9)**

- (1) Approval
- (2) Antenna form
- (3) Lens material
- (4) Install form
- (5) Process Seal
- (6) Electronic building brick

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- (7) House /protection grade
- (8) Cable access interface
- (9) Display/programming

# **GDRD82- 1 2 3 4 5 6 7 8 9**

## **(1)Approval**

- P Standard
- I Ex ia IIC T6...T2 Ga
- F Ex ia IIIC T85°C ...T300°C Da

## **(2)Antenna form**

- |    |                            |                       |
|----|----------------------------|-----------------------|
| DS | (-40~150°C) (-0.1~2.5) MPa | Lens diameter is 50mm |
| DQ | (-40~200°C) (-0.1~2.5) MPa | Lens diameter is 50mm |
| ES | (-40~150°C) (-0.1~2.5)MPa  | Lens diameter is 80mm |
| EQ | (-40~200°C) (-0.1~2.5) MPa | Lens diameter is 80mm |

## **(3) Lens material**

- A PTFE (-40~200°C)
- B FEP (-40~200°C)

## **(4) Install form**

- FA Flange DN50 PN16 Stainless steel 316L
- FB Flange DN80 PN16 Stainless steel 316L
- FC Flange DN100 PN16 Stainless steel 316L
- FD Flange DN125 PN16 Stainless steel 316L
- FE Flange DN150 PN16 Stainless steel 316L
- FX Nonstandard flange

## **(5) Process Seal**

- X None

## **(6) Electronic building brick**

- B (4-20)mA/HART 2-Wire
- R RS485/MODBUS Protocol

## **(7) House /protection grade**

- A Die-casting aluminum ADC12/IP67
- E Die-casting aluminum ADC12/IP67
- G Stainless steel 316L/IP67

## **(8) Cable access interface**

- M M20X1.5
- N ½ NPT

## **(9) Display/programming**

- A Programmer with Bluetooth
- B Programmer without Bluetooth
- C Remote display with Bluetooth
- D Remote display without Bluetooth
- X None

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**GDRD83- 1 2 3 4 5 6 7 8 9**
**(1)Approval**

P Standard  
 I Ex ia IIC T6...T2 Ga  
 F Ex ia IIIC T85°C ...T300°C Da

**(2)Antenna form**

AM	(-40~130°C) (-0.1~2.5)MPa	Lens diameter is ¾"
FM	(-40~130°C) (-0.1~2.5)MPa	Lens diameter is 1½"
FT	(-40~200°C) (-0.1~2.5)MPa	Lens diameter is 1½"
GM	(-40~130°C) (-0.1~2.5)MPa	Lens diameter is 3"
GT	(-40~200°C) (-0.1~2.5)MPa	Lens diameter is 3"

**(3) Lens material**

A PTFE (-40~200°C)

**(4) Install form**

GP G-thread/ Stainless steel 316L  
 NP NPT-thread/ Stainless steel 316L

**(5) Process Seal**

A FKM (-40~200°C)

**(6) Electronic building brick**

B (4-20) mA/HART 2-Wire  
 R RS485/MODBUS Protocol

**(7) House /protection grade**

A Die-casting aluminum ADC12/IP67  
 E Die-casting aluminum ADC12/IP67  
 G Stainless steel 316L/IP67

**(8) Cable access interface**

M M20X1.5  
 N ½ NPT

**(9) Display/programming**

A Programmer with Bluetooth  
 B Programmer without Bluetooth  
 C Remote display with Bluetooth  
 D Remote display without Bluetooth  
 X None

**GDRD87- 1 2 3 4 5 6 7 8 9**
**(1)Approval**

P Standard  
 I Ex ia IIC T6...T2 Ga  
 F Ex ia IIIC T85°C ...T300°C Da

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(2) Antenna form

NW	(-40~130°C) Atmospheric	Stainless steel 316L Gimbal
RW	(-40~200°C) Atmospheric	Stainless steel 316L Gimbal with Radiator
JG	(-40~130°C) (-0.1~0.3) MPa	Stainless steel 316L Thread M94X2
LG	(-40~200°C) (-0.1~0.3) MPa	Stainless steel 316L Thread M94X2 with Radiator

(3) Lens material

A	PTFE (-40~200°C)
C	PEEK (-40~200°C)

(4) Install form

FC	Flange DN100 PN16	Stainless steel 316L
FD	Flange DN125 PN16	Stainless steel 316L
FE	Flange DN150 PN16	Stainless steel 316L
FX	Nonstandard flange	

(5) Process Seal

A	FKM (-40~200°C)
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(6) Electronic building brick

B	(4-20) mA/HART 2-Wire
R	RS485/MODBUS Protocol

(7) House /protection grade

A	Die-casting aluminum ADC12/IP67
E	Die-casting aluminum ADC12/IP67
G	Stainless steel 316L/IP67

(8) Cable access interface

M	M20X1.5
N	½ NPT

(9) Display/programming

A	Programmer with Bluetooth
B	Programmer without Bluetooth
C	Remote display with Bluetooth
D	Remote display without Bluetooth
X	None

**GDRD89- 1 2 3 4 5 6 7 8 9**

(1) Approval

I	intrinsically safe
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(2) Antenna form

UA	(-40~130°C) (-0.1~0.1) MPa	30m
UB	(-40~130°C) (-0.1~0.1) MPa	70m

(3) Lens material

A	PTFE (-40~200°C)
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(4) Install form  
 FB Flange DN80 PN40 Stainless steel 316L

(5) Process Seal  
 X None

(6) Electronic building brick  
 B (4-20) mA/HART 2-Wire  
 R RS485/MODBUS Protocol

(7) House /protection grade  
 E Die-casting aluminum ADC12/IP67  
 M Stainless steel 316L/IP67  
 G Stainless steel 316L/IP67

(8) Cable access interface  
 M M20X1.5  
 N ½ NPT

(9) Display/programming  
 B Programmer without Bluetooth  
 X None

#### Technical Data

##### Electrical data

Interface	Terminal	Ui	Ii	Pi	Ci	Li
4-20mA	1 and 2	30.6V	131mA	1.0W	0	102uH
RS485	1 and 2	26.4V	166mA	1.1W	0	102uH
	4 and 5	6.5V	68mA	111mW	0	0

##### Environmental data

Ta (mainframe) : Refer to table below

But the T class to the whole equipment is impacted by the process temperature.

Refer to the table below for application.

Ta of mainframe	Process temperature at the antenna	T class of whole equipment
-40-50°C	-40-50°C	T6/85°C
-40-60°C	-40-95°C	T5/100°C
-40-70°C	-40-130°C	T4/135°C
	-40-195°C	T3/200°C
	-40-200°C	T2/300°C

(16) Test-Report No.

GC/Ex8341.00/19

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(17) Special Conditions for safe use

- Electrical connections and IS input parameters should be observed in accordance with Ex instruction.
- WARNING – Potential Electrostatic Charging Hazard- See instructions.
- When the enclosure is made of aluminum alloy, impact or friction should be avoid to control the mechanical spark.
- Non metallic parts of the equipment shall be protected from the sunlight to avoid the UV impact.
- The temperature class depends on Ta and process temperature as the table below listed.

Ta of mainframe	Process temperature at the antenna	T class of whole equipment
-40-50°C	-40-50°C	T6/85°C
-40-60°C	-40-95°C	T5/100°C
-40-70°C	-40-130°C	T4/135°C
	-40-195°C	T3/200°C
	-40-200°C	T2/300°C

- The radar level instrument shall use the suitable certified cable gland and blank element with  $T_s \geq 100^\circ\text{C}$ .
- The equipment should be protected to avoid high risk from mechanical impact.
- Installation of the equipment shall follow IEC 60079-14 last edition or any national equivalent standards.

(18) Basic Safety and Health Requirements  
 Covered by afore mentioned standard

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz

Cologne, 2020-09-30



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