



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **CSANe 24ATEX1145X** Issue: **0**

4 Equipment: **80G Radar Level Instrument, type GDRD8X Series**

5 Applicant: **Beijing GODA Instruments Co., Ltd.**

6 Address: **Hongfu Enterprise Incubation Yard 10
No.2 Workshop 2-4
Changping District
Beijing
China**

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

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 the confidential reports listed in Section 14.2.

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

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 Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 1G
II 1D
Ex ia IIC T6...T2 Ga
Ex ia IIIC T85°C...T300°C Da
Refer to Specific Conditions of Use for Ambient Temperatures.

Signed: M Halliwell

Title: Director of Operations



Project Number 80212882

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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

CSANe 24ATEX1145X
Issue 0

13 DESCRIPTION OF EQUIPMENT

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

(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

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CSANe 24ATEX1145X
Issue 0

(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 aluminium ADC12/IP67

E Die-casting aluminium ADC12/IP67

G Stainless steel 316L/IP67

(8) Cable access interface

M M20X1.5

N 1/2 NPT

(9) Display/programming

A Programmer with Bluetooth

B Programmer without Bluetooth

C Remote display with Bluetooth

D Remote display without Bluetooth

X None

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 3/4"

FM (-40~130°C) (-0.1~2.5)MPa Lens diameter is 1 1/2"

FT (-40~200°C) (-0.1~2.5)MPa Lens diameter is 1 1/2"

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"

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CSANe 24ATEX1145X
Issue 0

(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 aluminium ADC12/IP67

E Die-casting aluminium ADC12/IP67

G Stainless steel 316L/IP67

(8) Cable access interface

M M20X1.5

N 1/2 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

(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

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CSANe 24ATEX1145X
Issue 0

(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 aluminium ADC12/IP67
E Die-casting aluminium 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

(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)

(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 aluminium ADC12/IP67
M Stainless steel 316L/IP67
G Stainless steel 316L/IP67

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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

**CSANe 24ATEX1145X
Issue 0**

(8) Cable access interface

M M20X1.5

N 1/2 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

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	22 October 2024	R80212881A	The release of the prime certificate.

15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)

15.1 Electrical connections and IS input parameters should be observed in accordance with Ex instruction.

15.2 WARNING – Potential Electrostatic Charging Hazard- See instructions.

15.3 When the enclosure is made of aluminum alloy, impact or friction should be avoid to control the mechanical spark.

15.4 Non metallic parts of the equipment shall be protected from the sunlight to avoid the UV impact.

15.5 The temperature class depends on Ta and process temperature as the table below listed.

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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

CSANe 24ATEX1145X
Issue 0

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

- 15.6 The radar level instrument shall use the suitable certified cable gland and blank element with $T_s \geq 100^\circ\text{C}$.
- 15.7 The equipment should be protected to avoid high risk from mechanical impact.
- 15.8 Installation of the equipment shall follow EN 60079-14 last edition or any national equivalent standards.
- 16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)**
The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.
- 17 **CONDITIONS OF MANUFACTURE**
- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.
- 17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.

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Certificate Annexe



Certificate Number: CSANe 24ATEX1145X
 Equipment: 80G Radar Level Instrument, type GDRD8X Series
 Applicant: Beijing GODA Instruments Co., Ltd.

Issue 0

Drawings to support Issue 0

Drawing	Sheets	Rev.	Date	Title
GDRD82I-00	1 of 1	-	09 Oct 19	GDRD82 assembly drawing
GDRD83I-00	1 of 1	-	10 Oct 19	GDRD83 assembly drawing
GDRD87I-00	1 of 1	-	10 Oct 19	GDRD87 assembly drawing
GDRD89I-00	1 of 1	-	10 Oct 19	GDRD89 assembly drawing
GDRD82-DQ-00	1 of 1	-	09 Oct 19	DQ-Antenna
GDRD82-DS-00	1 of 1	-	09 Oct 19	DS-Antenna
GDRD82-EQ-00	1 of 1	-	09 Oct 19	EQ-Antenna
GDRD82-ES-00	1 of 1	-	09 Oct 19	ES-Antenna
GDRD83-AMA-00	1 of 1	-	09 Oct 19	AM-Antenna
GDRD83-FMA-00	1 of 1	-	09 Oct 19	FM-Antenna
GDRD83-FTA-00	1 of 1	-	09 Oct 19	FT-Antenna
GDRD83-GMA-00	1 of 1	-	09 Oct 19	GM-Antenna
GDRD83-GTA-00	1 of 1	-	10 Oct 19	GT-Antenna
GDRD87-JG-00	1 of 1	-	10 Oct 19	JG-Antenna
GDRD87-LG-00	1 of 1	-	10 Oct 19	LG-Antenna
GDRD87-NW-00	1 of 1	-	10 Oct 19	NW-Antenna
GDRD87-RW-00	1 of 1	-	10 Oct 19	RW-Antenna
GDRD89-UA-00	1 of 1	-	10 Oct 19	UA-Antenna
GDRD89-UB-00	1 of 1	-	10 Oct 19	UB-Antenna
GDRD-8X-YLKT	1 of 1	-	18 Oct 17	Block Diagram
GDRD-8X-DYRYLT	1 of 1	-	18 Oct 17	Power Board_485
GDRD-8X-DYLYLT	1 of 1	-	18 Oct 17	Power Board_4-20mA
GDRD-8X-DYSYLT	1 of 1	-	18 Oct 17	Vice Power Board
GDRD-8X-ZBRYLT	1 of 1	-	18 Oct 17	Main Board_485
GDRD-8X-ZBLYLT	1 of 1	-	18 Oct 17	Main Board_4-20mA
GDRD-8X-TXYLT	1 of 1	-	18 Oct 17	HF Board
GDRD-8X-BCQYLT	1 of 1	-	18 Oct 17	Display Board
GDRD-8X-BCQBYLT	1 of 1	-	18 Oct 17	Display Board Bluetooth
GDRD-8X-DYRYJMX	1 to 3	-	18 Aug 18	Power Board_485
GDRD-8X-DYLYJMX	1 to 3	-	18 Aug 18	Power Board_4-20mA
GDRD-8X-DYSYJMX	1 of 1	-	18 Aug 18	Vice Power Board
GDRD-8X-ZBRYJMX	1 to 2	-	18 Aug 18	Main Board_485
GDRD-8X-ZBLYJMX	1 to 2	-	18 Aug 18	Main Board_4-20mA
GDRD-8X-TXYJMX	1 of 1	-	18 Aug 18	HF Board
GDRD-8X-BCQYJMX	1 of 1	-	18 Aug 18	Display Board
GDRD-8X-BCQBYJMX	1 of 1	-	18 Aug 18	Display Board Bluetooth
GDRD-8X-DYRPCB	1 to 5	-	16 Apr 18	Power Board_485
GDRD-8X-DYLPCB	1 to 7	-	16 Apr 18	Power Board_4-20mA
GDRD-8X-DYSPCB	1 to 5	-	16 Apr 18	Vice Power Board
GDRD-8X-ZBRPCB	1 to 7	-	16 Apr 18	Main Board_485
GDRD-8X-ZBLPCB	1 to 7	-	16 Apr 18	Main Board_4-20mA
GDRD-8X-TXPCB	1 to 7	-	16 Apr 18	HF Board
GDRD-8X-BCQPCB	1 to 3	-	16 Apr 18	Display Board
GDRD-8X-BCQBPCB	1 to 3	-	16 Apr 18	Display Board Bluetooth
GDRD-8X-ORINGS	1 of 1	-	13 May 14	Specification for O-rings
GDRD-56-316L	1 of 1	-	15 Mar 14	Specification for metal material

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Certificate Annexe



Certificate Number: CSANe 24ATEX1145X
Equipment: 80G Radar Level Instrument, type GDRD8X Series
Applicant: Beijing GODA Instruments Co., Ltd.

Drawing	Sheets	Rev.	Date	Title
GDRD-56-ABS	1 of 1	-	11 May 14	Material of ABS
GDRD-56-AL	1 of 1	-	15 Mar 14	Material of aluminium alloy
GDRD-56-GEL2	1 to 16	-	13 Mar 13	Specification of the encapsulation
GDRD-CL-FEP	1 to 4	-	08 Apr 14	Specification for FEP
GDRD-CL-PC	1 to 2	-	08 Apr 14	Specification for PC
GDRD-CL-PEEK	1 of 1	-	08 Apr 14	Specification for PEEK
GDRD-CL-PTFE	1 to 2	-	08 Apr 14	Specification for PTFE
Littelfuse_Fuse_466	1 to 3	-	15 Jun 20	Littelfuse_Fuse_466
GDRD80-Terminal	1 to 2	-	13 Jun 15	Terminal Blocks - Component
GDRD-8X-ATEXXJ	1 of 1	-	03 Apr 19	Nameplate_4-20mA
GDRD-8X-ATEXXR	1 of 1	-	03 Apr 19	Nameplate_RS485
GDXX-GY-GJ	1 to 2	-	20 Mar 15	WI_Encapsulation
-	1 of 1	-	18 Dec 19	Design Plan
GDRD80-SMS	1 to 18	-	15 Jun 20	User Manual

Drawings amended at Issue 0

Drawing	Sheets	Rev.	Date (Stamp)	Title
GDRD-8X-ATEXXJ	1 of 1	240724	24 Jul 24	Nameplate_4-20mA
GDRD-8X-ATEXXJR	1 of 1	240724	24 Jul 24	Nameplate_RS485

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