

1 **UK-TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres
UKSI 2016:1107 (as amended) – Schedule 3A, Part 1**

3 UK-Type Examination Certificate Number: **SGS24UKEX0056X**

4 Product: **GR Series Pressure Switches**

5 Manufacturer: **Delta Controls Limited**

6 Address: **Hudson House, Albany Park, Camberley, Surrey GU16 7PL**

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

8 SGS United Kingdom Ltd. (formerly SGS Baseefa Ltd.), Approved Body number 1180, in accordance with Regulations 42 and 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in a confidential report identified in the revision table at item 20.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 EN 60079-11: 2012

10 If the sign “X” is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

11 This UK-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

Ex II 1 GD Ex ia IIC T6 Ga (-40°C ≤ T_a ≤ +60°C) or Ex ia IIC T4 Ga (-40°C ≤ T_a ≤ +85°C)

Ex ia IIIC T₂₀₀85°C Da (-40°C ≤ T_a ≤ +60°C) or Ex ia IIIC T₂₀₀135°C Da (-40°C ≤ T_a ≤ +85°C)

SGS Customer Reference No. **0279**

Project File No. **24/0129**

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(formerly SGS Baseefa Ltd.)

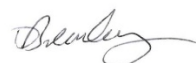
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D BREARLEY
LEAD CERTIFICATION ENGINEER
On behalf of SGS United Kingdom Limited

13 **Schedule**

14 **Certificate Number SGS24UKEX0056X**

15 **Description of Product**

The GR Series Pressure Switches are designed to allow the switching of one or two internally mounted microswitches connected to intrinsically safe circuits, actuated by pressure being applied to a piston / level / diaphragm assembly.

The apparatus comprises an aluminium or stainless steel enclosure with a pressure port containing a piston and diaphragm assembly connected externally to various process connections. The piston passes through a bushing arrangement into the main enclosure to actuate one or two microswitches fitted in a sealed snap switch assembly. External connections to the microswitches are via flying lead connections fed out through the top of the enclosure or via terminals fitted in a plastic enclosure.

The GR Series Pressure Switches has a number of different models, the differences being the type and number of microswitches fitted and the process connection. The following models in the range have been assessed: -

Typical Model Number

4 **GR2** **A* **** **HP** * ** ****
 ↑ ↑ ↑ ↑
1. **2.** **3.** **4.**

1. Enclosure Type – 2 options:-

- 4** = Stainless Steel Enclosure
- 5** = Aluminium Enclosure

2. Pressure Switch Type – 5 Options:-

- GR2** = Fixed Switching Differential Pressure Switch (Max. Working Pressure 155 Bar.)
- GR3** = Fixed Switching Differential Pressure Difference Switch (Max. Working Pressure 110 Bar)
- GR4** = Fixed Switching Differential Pressure Switch (Max. Working Pressure 600 Bar or 1000 Bar)
- GR6** = Fixed Switching Differential Pressure Difference Switch (Max. Working Pressure 250 Bar)
- GR7** = Fixed Switching Differential Temperature Switch

3. Electrical Entry – 5 Options: -

- A** = Flying Leads - 0.5 Metre Lead Length
- B** = Flying Leads - 1 Metre Lead Length
- L** = Flying Leads – 3 Metre Lead Length
- V** = Plastic Terminal Enclosure with Screw Terminals
- W** = Plastic Terminal Enclosure with DIN rail mounted terminals

4. Switch Options – 6 Options:-

- HP** = Single Pole Double Throw (SPDT) gold plated silver contacts
- HQ** = Double Pole Double Throw (DPDT) gold plated silver contacts (Simultaneous falling under pressure)
- HT** = Double Pole Double Throw (DPDT) gold plated silver contacts (Simultaneous rising under pressure)
- HV** = Single Pole Double Throw (SPDT) gold alloy contacts for low voltage switching
- HW** = Double Pole Double Throw (DPDT) gold alloy contacts for low voltage switching (Simultaneous falling under pressure)
- HY** = Double Pole Double Throw (DPDT) gold alloy contacts for low voltage switching (Simultaneous rising under pressure)

* denotes other parameters of the model number relating to the construction, setting and process connections options of the apparatus. The differences in these options do not have an affect on the intrinsic safety assessment.

Each microswitch circuit has the following input parameters: -

- U_i = 30V
- I_i = 300mA
- C_i = 0
- L_i = 0

Variation 0.1

To permit the mounting of one or two GR Series Pressure Switches to a plastic terminal enclosure containing screw terminals or DIN rail mounted terminal connections to form the Model GRISASSY02****. The * denote the configuration of the model in terms of the GR Series Pressure Switches and the termination resistors fitted.

Each microswitch circuit has the same input parameters as specified for the GR Series Pressure Switches.

16 Report Number

See Item 20 – Certificate History

17 Specific Conditions of Use

1. The equipment must be installed such that the risk of impact or abrasion is negligible.
2. The permanently attached leads must be suitably protected against mechanical damage and terminated in a suitable junction or terminal facility with a minimum degree of protection of at least IP6x.
3. The installation of external connections to models of the equipment with terminal enclosures must be carried out using appropriate conduit or cable gland with a degree of protection of at least IP6x, equipment certified by an EU approved Certification Body.
4. Some variants of the Model GRISASSY02**** use a plastic enclosure that constitutes a potential electrostatic charging hazard. The equipment must only be cleaned with a damp cloth.

18 Essential Health and Safety Requirements

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause	Subject
13	LVD type requirements
14	Overloading of equipment (protection relays, etc.)
21 (1)	External effects
21 (2)	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
14821	1 of 1	I	13/05/2024	Ex ia GR Series Rating Label
14823	1 of 1	E	14/05/2024	Adhesive Label Configuration GR – Ex ia

For all other drawings see Baseefa06ATEX0091X

20 Certificate History

Certificate No.	Date	Comments
SGS24UKEX0056X	31 October 2024	Prime Certificate Report Number: 24(C)0129 Project Number: 24/0129 Original issue of the certificate

For drawings applicable to each issue, see original of that issue.