



CERTIFICATE NUMBER
16-TA1483339-PDA

DATE
16 Feb 2016

ABS TECHNICAL OFFICE
Taipei ESD

CERTIFICATE OF DESIGN ASSESSMENT

This is to certify that a representative of this Bureau did, at the request of

GOLDEN MOUNTAIN ENTERPRISE CO., LTD.

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: **Pressure Gauge**

Model: **Digital Pressure Gauge: DPG3000, DPG3000T, DPG3500-W, DPG3500-G and DPG3600; Pressure Gauge with Micro Switch: PIS5000W and PIS5000X; Differential Pressure Gauge: DPH series, DPH20...**

This Product Design Assessment (PDA) Certificate 16-TA1483339-PDA, dated 16/Feb/2016 remains valid until 15/Feb/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

Shou-Hua Huang
Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).



Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product.

This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 29/AUG/2017. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 15/FEB/2021 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Product Name: Pressure Gauge

Model Name(s): Digital Pressure Gauge: DPG3000, DPG3000T, DPG3500-W, DPG3500-G and DPG3600; Pressure Gauge with Micro Switch: PIS5000W and PIS5000X; Differential Pressure Gauge: DPH series, DPH200, DPH300, DPH400, DPG4000 and DPG5000; Pressure Gauge: PG-SERIES, PGC-SERIES, PGE-SERIES, PGR-SERIES, PGS-SERIES, PG-60P, PGF-60P and DMG SERIES.

Presented to:

GOLDEN MOUNTAIN ENTERPRISE CO., LTD.
NO.9, LANE 133, XING-HUA ST.
CHIEN-CHEN DISTRICT
Taiwan, R.O.C.

Intended Service:

Control or alarm for liquid indication in tanks and piping systems on Ships and Offshore Facilities.

Description:

Digital Pressure Gauge 3", Digital Pressure Gauge 2.5", Digital Pressure Gauge 1.5", Pressure Gauge with Micro Switch Weather Proof Type, Differential Pressure Gauge, Capsule Type Pressure Gauge, Stainless Steel Pressure Gauge, Polypropylene Case Pressure Gauge, Diagram Seal Pressure Gauge and Diagram Pressure Gauge DMG Series.

Tier:

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Ratings:

Pressure Range for Model DPG3000: 100~3000psi and -1~0 Bar; Model DPG3000T: 15~5000psi; Model DPG3500-W and DPG3500-G: 0~5000psi; Model DPG3600: 0~150psi; Proof Pressure for Model PIS5000: 40 MPa (400 kg/cm²); Measuring Pressure Range for Model PIS5000 and PIS5000X: 0~(-1) kg/cm²; 1~400 kg/cm² available; Working Pressure for Model DPH SERIES, DPH200,

DPG4000 and DPG5000: 200 kg/cm²; Working Pressure for Model DPH300: 100 kg/cm²; Working Pressure for Model DPH400: 30 kg/cm²; Pressure Range for Model PG-SERIES: -1~0 to 0~1000 kg/cm² (bar, psi) available; Model PGC-SERIES: 25mbar to 600mbar; Model PGE-SERIES: -760mmHg~0 kg/cm²...0~70 kg/cm²; Model PGR-SERIES and PGS-SERIES: -1~0 to 0~1600 kg/cm²; Model PG-60P and PGF-60P: -76cmHg~0 to 0~20 kg/cm²; Operating pressure limited for DMG SERIES: Steady pressure - full scale value: Fluctuating(pulsating) - 90% of full scale value Pressure greater or equals 40 mbar for membrane- SS316+PTFE(Teflon lining), Pressure greater or equals 40 mbar for case filled gauge. Operating Temperature for Model DPG3000 and DPG3000T: -10 to 60 Deg. C.; Working Temperature for DPG3500-W and DPG3500-G: -10~60 Deg. C.; Temperature Compensation for Model DPG3600: -10~60 Deg. C.; Ambient Temperature for Model PIS5000 and PIS5000X: -20 Deg. C.~70 Deg. C.; Working Temperature for Model DPH SERIES, DPH200, DPH300, DPH400, DPG4000 and DPG5000: max. 80 Deg. C.; Linitea Temperature for Model PG-SERIES: -20 Deg. C. to 100 Deg. C. (process fluid); Temperature Limit for Model PGC-SERIES: Ambient temp.: -25 Deg. C. to 65 Deg. C. and Process temp.: max 150 Deg. C.; Temperature Limit for Model PGE-SERIES: Ambient temp.: 0 Deg. C. to 65 Deg. C. and Process temp.: max 200 Deg. C.; Temperature Limit for Model PGR-SERIES: Ambient temp.: -20 Deg. C. to 65 Deg. C. and Process temp.: max 150 Deg. C.; Temperature Limit for Model PGS-SERIES: Ambient temp.: -25 Deg. C. to 65 Deg. C. and Process temp.: max 300 Deg. C.; Working Temperature for Model PG-60P and PGF-60P: -20 Deg. C.~60 Deg. C.; Operating temperature limited for DMG SERIES: -20 Deg. C.~0 to 100 Deg. C., w/cooling element or capillary, up to 350 Deg. C. See more details via a click on ABS Type Approved Products for each model.

Service Restrictions:

Unit Certification is not required. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard; the specification or standard, including inspection standards and tolerances, must be clearly defined the conformity criteria.

Comments:

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in these products. Where pressure gauges are fitted in piping systems, valves are to be provided so that the devices can be isolated and removed without impairing the integrity of the pressurized system. Not to be installed in hazardous areas.

Notes / Documentation:

Drawing No. Catalogue for DPG3000 etc., Digital Pressure Guage etc., Correspondence, Required for ABS Type Approval-Product Model, Correspondence, Declaration of the Absence of Asbestos in the Manufacture or Packaging of Materials, Components, Products or Systems included in and offered for the ABS Type Approval Program, Correspondence, Type Approval Request.

Term of Validity:

This Product Design Assessment (PDA) Certificate 16-TA1483339-PDA, dated 16/Feb/2016 remains valid until 15/Feb/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

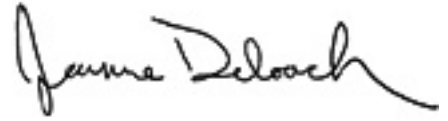
ABS Rules:

The Rules applicable to this assessment are covered to the following only: - Steel Vessel Rules (2016): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-1-1/Table 3 4-6-2/9.11.2 and 4-8-3/Table 2, - Steel Vessels Under 90 Meters (295 Feet) in Length (2016): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-3/Table 1 and 4-6-4/10.7.5, - Offshore Support Vessels (2016): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-1-1/Table 3, 4-6-2/9.11.2 and 4-8-3/Table 2, - Mobile Offshore Drilling Unit (2016): 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-2-1/11.27.2 and 4-3-3/Table 1, - Rules for Condition of Classification - Offshore Units and Structures (2016): 1-1-4/7.7 (for ships), 1-1-4/9.7 (for offshore units and structures), 1-1-A2 and 1-1-A3.

National Standards:
International Standards:
Government Authority:

EUMED:**Others:**

| Model Certificate | Model Certificate No | Issue Date | Expiry Date |
|--------------------------|-----------------------------|-------------------|--------------------|
| PDA | 16-TA1483339-PDA | 16/FEB/2016 | 15/FEB/2021 |



ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.