

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Pressure Transmitter**with type designation(s)
APT3100, APT3200

Issued to

Duon System Co., Ltd.
Gunpo-si Gyeonggi-do, Republic of Korea

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Location classes:****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

Temperature	D
Humidity	B
Vibration	B
EMC	B
Enclosure	C

This Certificate is valid until **2020-12-31**.Issued at **Busan** on **2017-02-28**DNV GL local station: **Seoul**for **DNV GL**Approval Engineer: **Baeg Soon Choi**

Michael Jost Auf der Stroth
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Job Id:
Certificate No: **TAA00000MC**

Product description

The following smart pressure transmitters are included in the certificate:

Name	Type	Model no.	Range (kPa)
APT3100	Differential	D3	- 7.5 to 7.5
		D4	- 37.3 to 37.3
		D5	-186.5 to 196.5
		D6	- 690 to 690
		D7	- 2068 to 2068
	High Line Pressure	D8	- 6895 to 6895
		H4	- 37.3 to 37.3
		H5	-186.5 to 196.5
		H6	- 690 to 690
		H7	- 2068 to 2068
	Gauge	G3	- 7.5 to 7.5
		G4	- 37.3 to 37.3
		G5	- 100 to 196.5
		G6	- 100 to 690
		G7	- 100 to 2068
APT3200	Gauge	G8	- 100 to 6895
		G9	- 100 to 20680
		G4	- 100 to 1000
	Absolute	G5	0 to 5000
		G6	0 to 20000
		G7	0 to 60000
		A4	0 to 200
		A5	0 to 1000
		A6	0 to 2000

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Type Approval documentation

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, November 2016.
Pressure test at 200 % of nominal pressure for 10 minutes.

Periodical assessment

The scope of the retention/renewal survey is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.



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The main elements of the survey are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Retention survey is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE