DNV·GL

Certificate No:
TAA000022F

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Level Indicating System

with type designation(s)
IM-EPS Level Indicating System, Pressure Transmitter IM-ATM.1ST, IM-ATM.ECO, Submersible Pressure Transmitter IM-ATM.1ST/N, IM-ATM.ECO/N

Issued to
Inelteh d.o.o.
RIJEKA, Croatia

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Type	Temperature	Humidity	Vibration	EMC	Enclosure
IM-EPS Level Indicating System	**B**	**B**	**A**	**A**	**B**
Pressure Transmitter IM-ATM.1ST, IM-ATM.ECO	**B**	**B**	**A**	**A**	**IP65 (DIN connector), IP 67 other**
Submersible Pressure Transmitter IM-ATM.1ST/N, IM-ATM.ECO/N	**B**	**B**	**A**	**A**	**IP68**

Issued at **Hamburg** on **2018-11-16**
This Certificate is valid until **2023-11-15**.
DNV GL local station: **Rijeka**

Approval Engineer: **Marco Rinkel**

for **DNV GL**

Joannis Papanuskas
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.

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Product description

System to measure tank levels.
System main components::
Air preparation unit
IM-EPS control unit
Non-return valves

Software Version: 1.0

Measuring range:	0...16 mH20 or 0-25mH20, at request any range possible
Overpressure:	min. 4bar
Power supply:	24VDC or 120/230-500VAC 50/60Hz
Output signal:	basic output 4-20 mA, Rs485 (RTU slave, modbus protocol when IM-CPU is used)
Air supply to :	4 - 8 bar, dry and clean instrument air (pressure from air preparation unit adjusted to 2,5 bars, max. 3 bars allowable)
Air consuption:	approx. 10 l/h per measurnig point (depending on flow adjusted)
Accuracy:	<0,25 % (hysteresis and repeatability)

Enclosure (IM-EPS control unit): IP 54

Pressure Transmitter IM-ATM.1ST, IM-ATM.ECO

Pressure type:	gauge, absolute (vacuum) or sealed gauge
Pressure range:	0...0.1 bar up to 0...1000 bar
Power supply:	24V DC (9V DC min. ... 30V DC max.)
Output signal:	4...20 mA, 2-wire connection, loop-powered
Accuracy:	better than ±0.25% FS (at 25°C)
Total error range:	better than ±1.0% FS
Process connection:	G 1/2", G 1/4", 1/2 NPT, 1/4 NPT
Electrical connection:	plug according to DIN 43650 (DIN EN 175-803-A) connector Binder 723, 5-pin (IEC 130-9)
Material:	housing, diaphragm, process connection - stainless steel or titanium
Degree of protection:	IP65 (DIN connector), IP 67 other

Submersible Pressure Transmitter IM-ATM.1ST/N, IM-ATM.ECO/N

Possible variants:	ECO or 1ST
Pressure type:	gauge or absolute (vacuum)
Pressure range:	0…0.1 bar up to 0…25 bar
Power supply:	24V DC (9V DC min. … 30V DC max.)
Output signal:	4…20mA, 2-wire connection, loop-powered
Accuracy:	better than ±0.25% FS (at 25°C)
Total error range:	better than ±1.0% FS
Electrical connection:	fixed cable
Fixing:	freely suspended cable
Material:	housing, diaphragm, process connection - stainless steel or titanium seals - Viton cable PUR or FEP - *Installation inside tank only
Degree of protection:	IP68

Application/Limitation

The following documentation of the actual application is to be submitted for approval in each case:
- Reference to this Type Approval Certificate
- System block diagram
- Power supply arrangement (may be part of the System block diagram)

As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1

[1.4] will not be required. Correct configuration and set up for each delivery to be tested during commissioning after installation.

Software control
All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV GL for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

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

Tests carried out
Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Type Approval documentation
(see ANNEX))

Marking of product
The products to be marked with:
- manufacturer name
- model name
- serial number
- power supply ratings

Periodical assessment
The scope of the periodical assessment 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.

The main elements of the assessment 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

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE

ANNEX
Type Approval documentation
(hidden)