EUROPEAN UNION RECOGNISED ORGANISATION (EU RO) MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

Certificate No:
MRA000005J

In accordance with Article 10.1 of EU Regulation 391/2009

This Certificate is issued to

Barksdale GmbH

Reichelsheim (Wetterau), Hessen, **Germany**

for
Pressure Switches

with type designation(s)
Series 8000 / 9000; Series KLM /KLK

The product is found to comply with
EU RO Mutual Recognition Technical Requirements for Pressure Switches

Intended service
Pressure switches for use in control, alarm, monitoring, and instrumentation systems subject to classification.

Temperature [°C]:	**-25°C to 70°C**
Vibration:	**±1.6 mm / 4 g**
EMC:	**All locations including bridge and open deck**
IP Code:	**see Application/Limitation**

This is to certify:

that the Product referred to herein has been inspected for the Manufacturer, pursuant to the relevant requirements of the European Union Recognised Organisation Mutual Recognition procedure, required by Article 10.1 of EU Regulation 391/2009, and has been found in accordance with those requirements.

This Certificate is valid until **2030-10-07**.

Issued at **Hamburg** on **2025-10-08**

DNV local unit: **Augsburg** for **DNV**

Approval Engineer: **Holger Jansen**

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.
LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

Compact Pressure Switches

Series 8000:	8xxx followed by -GL (diaphragm or piston pressure switch)	
Process connection:	G1/4", 1/4" NPT, Cetop flange	
Pressure range:	0.4…6 bar up to 80…600 bar	
Electrical connection:	PL1, PL2, PL3, PL4 or cable CAx	
Contact rating:	Output 1x c/o	
	Silver contacts:	125/250VAC: 2A inductive, 5A resistive
		30VDC, 2A inductive, 5A resistive
		250VDC: 0.03A inductive, 0.2A resistive
	Gold contacts:	≤300mV: ≤400mA resistive; ≤30VDC: ≤4mA resistive

Series 9000:	9xxx followed by -GL (piston pressure switch)	
Process connection:	G1/4", 1/4" NPT, Cetop flange	
Pressure range:	0.2…2 bar up to 40…400 bar	
Electrical connection:	PL1, PL2, PL3, PL4 or cable CAx	
Contact rating:	Output 1x c/o	
	Silver contacts:	250VAC, 2.5A inductive, 10A resistive
		24VDC: 1A inductive, 6A resistive

Series KLM:	KLM-xxx-x-x (diaphragm pressure switch)	
Pressure range:	1…6 bar up to 10…40 bar	
Process connection:	G1/4", 1/4" NPT, M12x1.5, M18x1.5, 7/16-20UNF	
Electrical connection:	S1, ST0, ST1, A5, V3, V5, or cable Kx	
Contact rating:	Output 1x c/o	
	Silver contacts:	30VDC: 3A inductive, 5A resistive
		50VDC: 1A inductive, 1A resistive

Series KLK:	KLK-xxx-x-x (piston pressure switch)	
Pressure range:	30…100 bar up to 150…400 bar	
Process connection:	G1/4", 1/4" NPT, M12x1.5, M18x1.5, 7/16-20UNF	
Electrical connection:	S1, ST0, ST1, A5, V3, V5, or cable Kx	
Contact rating:	Output 1x c/o	
	Silver contacts:	30VDC: 3A inductive, 5A resistive
		50VDC: 1A inductive, 1A resistive

Manufactured by

Barksdale GmbH
Dorn-Assenheimer Str. 27
61203 Reichelsheim, Germany

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.

Degree of protection: IP65 / IP 67 (depending on connector type)

Type Approval documentation

Marking of product

The product to be marked with:

- Manufacturer name
- Type No.
- Serial No.
- Ratings, including max. working pressure and class of accuracy
- IP ratings
- Operating temperature

Other Conditions

The units have been verified for compliance with EU Mutual Recognition Technical Requirements Pressure Switches Version 0.3, dated 2024-07-01,

Environmental test parameters:

Temperature:	-25°C and 70°C
Humidity:	95%RH @ 55°C
Vibration:	±1.6 mm / 4 g
Enclosure:	IP65 / IP 67 (depending on connector type)

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 annually. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE

Generic Statement for EU RO MR Type Approval Certificate

When a product is presented with this EU RO MR Type Approval Certificate for given application, its acceptability with regards to the limitations stated in the certificate conditions defined in 1b, 1c and 1d of the applied Technical Requirement will be evaluated by the EU RO in charge of classing the ship or being in charge of the unit/system certification.

In accordance with Article 10 of Regulation (EC) No 391/2009 of the European Parliament and of the Council of 23 April 2009 "on common rules and standards for ship inspection and survey organizations", the following organizations, recognized by the EU on this date, have agreed on the technical and procedural conditions under which they will mutually recognize this certificate:

- American Bureau of Shipping (ABS);
- Bureau Veritas (BV);
- China Classification Society (CCS);
- Croatian Register of Shipping (CRS);
- DNV;
- Indian Register of Shipping (IRS);
- Korean Register (KR);
- Lloyd's Register Group Ltd. (LR);
- Nippon Kaiji Kyokai General Incorporated Foundation (ClassNK);
- Polish Register of Shipping (PRS);
- RINA Services S.p.A. (RINA);
- Russian Maritime Register of Shipping (RS).

The scheme for the mutual recognition of class certificates for materials, equipment and components laid down by Article 10(1) of Regulation (EC) No 391/2009 is only enforceable within the Union in respect of ships flying the flag of a Member State. As far as foreign vessels are concerned, the acceptance of relevant certificates remains at the discretion of relevant non-EU flag States in the exercise of their exclusive jurisdiction, notably under the United Nations Convention on the Law of the Sea (UNCLOS). (In accordance with COMMISSION IMPLEMENTING REGULATION (EU) No 1355/2014 amending Regulation (EC) No 391/2009 - recital (25)).