

TYPE APPROVAL CERTIFICATE

Certificate No: **TAA0000162** Revision No: **4**

This is to certify:

That the Electrical Parameter Transmitter

with type designation(s) **LCON, LOCC-Box**

Issued to Friedrich Lütze GmbH Weinstadt, Germany

is found to comply with DNV 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. Temperature D Humidity B

HumidityBVibrationB/A*), see page 3EMCAEnclosureA

Issued at **Hamburg** on **2021-09-30** This Certificate is valid until **2022-06-06**. DNV local station: **Augsburg**

Approval Engineer: Jens Dietrich

for **DNV**

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.

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.





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Product description

Microcompact load monitoring devices:

LOCC-Box-XX 7-xxxx

LOCC Pov	Broduct familia name
LUCC-BUX.	
XX:	Function:
	FB = load protection device, max. 10A, without communication interface
	Net = load protection device, max. 10A, with communication interface
	SC = load protection device, max. 5A, without communication interface
	SCNet = load protection device, max. 5A, with communication interface
	ES = LOCC-Box supply set (EKL + EB)
	EKL = LOCC-Box supply terminal 10qmm
	DKL = LOCC-Box supply terminal 10qmm, with outage
	EB = LOCC-Box supply terminal, endblock
XXXX:	Options: 4 digits for software parameters or version

Electronic load monitoring device DC 1...6A, 2 channels, fixed characteristic:

LOCC-Box-ED	part no. 716x15.zz:
LOCC-Box-EDK I	part no. 716x16.zz:
LOCC-Box-ED-NET	part no. 716x19.zz:

Customer: x = 4: Lütze, x = 9: RS-Components Characteristics: zz = 01: C1 zz = 02: C2 zz = 03: C3 zz = 04: C4 zz = 05: C5

Accessories: Insulated jumper combs LOCC-Box-BKW 7-64xx, LOCC-Box-BKR 7-64xx, LOCC-Box-BKB 7-64xx.

Microcompact analogue measuring signal converters, limit switches, splitters:

LCON XXXX YYYY-YYYYZ-xx

LCON:	Product familiy name
X:	Function:
	TA = Temperature Analogue Converter
	TA NTC = Temperature Analogue Converter for NTC sensors
	AA = Analogue Analogue Converter
	TLS = Temperature Limit Switch for NTC sensors
	TLS NTC = Temperature Limit Switch
	ALS = Analogue Limit Switch
	AASP = 2x Analogue Analogue Splitter
	AALS = Analogue Analogue Converter + Limit Switch
Y:	D = selectable range via DIP switch
	FDT = selectable range via FDT (software)
	DFDT = selectable via DIP switch and FDT (software)
	80621 = Code for housing and Power DC 24V
Z:	0 = Screw terminal
	1 = Spring terminal
XX:	Options: 2 digits for software parameters or version

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. LOCC-Box units are no replacement for circuit protection.

*) If the insulated jumper combs are used environmental category for vibration is degraded to A.



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EMC in the range 2 GHz to 6 GHz according to DNVGL-CG-0339, August 2021 has not been documented. EMC up to 6 GHz must additionally be documented for installation on ships contracted for construction on or after 2022-01-01.

Tests carried out

Applicable tests based on DNV GL CG0339, November 2016.

Marking of product

Manufacturer, type designation, electrical characteristics, serial number.

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