

# TYPE APPROVAL CERTIFICATE

DNV·GL

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the DNV GL Type Approval System.

Certificate No. **86 591 - 10 HH**

Company **Nexans Deutschland GmbH**  
**Bonnenbroicher Str. 2 - 14**  
**41238 Mönchengladbach, GERMANY**

Product Description **Halogen free, low smoke communication and instrumentation shipboard cable**

Type **TX(I)331, TX(C)331, TCX(I)331, TCX(C) 331, TX(I)331 FLEXISHIP,  
TX(C)331 FLEXISHIP, TCX(I)331 FLEXISHIP, TCX(C) 331 FLEXISHIP**

Environmental Category **None**

Technical Data /  
Range of Application

<b>Rated voltage:</b>	<b>150/250 V</b>
<b>Maximum operating conductor temperature:</b>	<b>90° C</b>
<b>Conductor:</b>	<b>Plain or tinned copper, stranded, class 2 or class 5</b>
<b>Insulation:</b>	<b>Mica-tape plus insulation material XLPE</b>
<b>Individual screen:</b>	<b>Alu/Polyester tape with a tinned copper drain wire TX(I) + TCX(I) types</b>
<b>Common Screen:</b>	<b>Alu/Polyester tape with a tinned copper drain wire TX(C) + TCX(C) types</b>
<b>Braid Armour:</b>	<b>Plain or tinned copper braid TCX(C) + TCX(I) types</b>
<b>Outer sheath:</b>	<b>SHF 1</b>
<b>Number of pairs:</b>	<b>Cross-sectional areas:</b>
<b>1 to 37 pairs</b>	<b>0, 5 mm<sup>2</sup>, 0,75 mm<sup>2</sup>, 1,5 mm<sup>2</sup></b>
<b>1 to 21 triples</b>	<b>0, 5 mm<sup>2</sup>, 0,75 mm<sup>2</sup>, 1,5 mm<sup>2</sup></b>

Test Standard **IEC 60092-350:2014; 60092-360:2014; 60092-376:2003; 60228:2004;  
IEC 60331-1/-2:2009; 60331-21:1999; 60332-1:2004; 60332-3-22:2009;  
IEC 60754-1/-2:2011; 60684-2:2011; 61034-2:2005**

Documents **Test report : No. B-0505, I-0053, R-0260 dated 02.11.2009 and  
TP-SRQ-2009-001/1 // 002/1 // 003 // 004/1 dated  
14.08./07.12.2009; 09 223 dated 17.12.2009;  
TMP-SRV-2015-80-01/-02 dated 02.10.2015;  
Emission reports 1061, 1063, 1066, 1067, 1068 dated 19.08.2015**

**Specification: MG-S-104, dated 10.07.2015, MG-S-105, dated 10.07.2015  
MG-S-106, dated 09.07.2015, MG-S-107, dated 10.07.2015**

Remarks **This certificate is issued on the basis of GL Guidelines for the Performance of  
Type Approvals, Chapter 1 - Procedure (VI-7-1), Edition 2007 and the  
GL Type Approval Procedure for Shipboard Cables.**

**Products approved by this certificate are accepted for installation on all vessels  
classed by DNV GL.**

Valid until **2020-12-01**

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File No. **I.N.01**

**Hamburg, 2015-12-01**

Type Approval Symbol



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**DNV GL**