



Certificate No:
TAA00003BX

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Miscellaneous Internal Communication Equipment

with type designation(s)
ACE16 Components

Issued to

Tyco Fire & Integrated Solutions Ltd
Manchester, United Kingdom

is found to comply with

IEC 60945 Ed. 4 (2002-08) Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results

Application :

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

Issued at **Høvik** on **2023-10-30**

This Certificate is valid until **2028-10-29**.

DNV local unit: **UK & Ireland CMC & VMC**

for **DNV**

Approval Engineer: **Frederik Tore Elter**

Frederik Tore Elter
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.



Product description

The following modules/components are found compliant:

ACE16 Component	Type	Art. No.	Location
SYSTEM COMPONENTS	CCU SIL PCB	0B101/16/3/04	Protected
	Fan Assembly	AMPIID/48/FAN AMPIID/24/FAN	Protected
	401 DC Power Supply	401/PSU	Protected
	48V DC Power Supply (SP-200-48)	SP-200-48	Protected
	403 DC Power Supply	0B01/02/2/12	Protected
ACE16 SUB COMPONENTS	ACE 405 Audio Hub	0B101/01/3/06	Protected
	ACEGen No Chime	0B101/01/3/41	Protected
	ACEGen ACE 408 CON	0B101/01/3/36	Protected
	ACE16 ACET/34/HUB PCB	0B101/01/3/37	Protected
	ACE16 ACE16/40/HUB	0B101/16/3/13	Protected
	405-1 Audio Compressor	0B101/01/3/70	Protected
	405-1 Audio Compressor SIL	0B101/01/3/71	Protected
	100V Line Monitor HUB	0B015/54/3/01	Protected
	100V Line Monitor EOL SILS	0B015/54/3/02	Protected
	CCU 2:4 HUB	0B101/16/3/08	Protected
	Battery Charger BC0001	216/000/16/3/03	Protected
	EMC Filter	IHF50	Protected
ACE16 SUB COMPONENTS	AMPIID Motherboard PCB	0B015/50/3/53	Protected
	AMPIID Fan SIL	0B015/50/3/13	Protected
	AMP Class D 360W Amplifier	AMPCLASSD360W	Protected
	AMP Class D 360 W Amplifier Hot Standby	AMPCLASSD360W	Protected
Access Units	ACET/18/NK	0B101/19/2/06	Protected
	ACET/S01	0B101/06/1/01	Protected

Application/Limitation

- Listed components are to be installed in accordance with manufacturers documentation.
- Components may be installed as part of a Public Address/General Alarm System. This certification is excluding functional IMO and Class requirements. For installation as part of a Public Address/General Alarm System; separate verification/certification is required, as applicable for vessel onboard installation.

Type Approval documentation

DNV No.	Document No.	Rev.	Title
72			Datasheet: Blade 360 Amplifier Frame/Motherboard (AMP Class D 60W)
71	PM0004	1	Datasheet: Industrial Fan Assembly BLADE 360 & AMPIID
70	PM0020	1	Datasheet: Blade 360 Industrial Class D Amplifier (AMP Class D 360W Amplifier)
69	PM0012	1	Datasheet: PAGA SYSTEM MICROPHONE HAZARDOUS AREA ACCESS UNIT TYPE - ACETS01
68	PM0031	1	Datasheet: AUDIO HUB ACE/405/HUB
67	PM0006	1	Datasheet: Call / Connect 3 Digital Storage Playback System Type - CCU3
66	PM0011	1	Datasheet: ACE/405-1/HUB AUDIO CONDITIONING HUB
65	PM0034	1	Datasheet: 100V Line Loop and Monitor Hub
64	IHF50	004	Datasheet: IHF50 Specification
63	IHFxx-GS	03	Datasheet: General Specification, 2 Wire IHF Filter Range

DNV No.	Document No.	Rev.	Title
56	75944134-01	2	Report: TÜV SÜD, Environmental Testing of the Tyco Fire and Integrated Solutions ACE16M System,
55	75935560-01	01	Report: TÜV SÜD, Environmental, Tyco Fire and Integrated Solutions Marine Alarm System
54	75935560-01/02	01	Report: TÜV SÜD, EMC, Tyco PAGA Model A16
53	75943653-01	01	Report: TÜV SÜD, EMC, Tyco PAGA Model ACE16 (IEC60945 Clause 9.3)
34	PML/0011	Rev. D	Datasheet: PML0011 - ACE 16 Single PAGA System
26	PM/0008	Rev. G	Datasheet: PM0008 - ACE16 Node

Tests carried out

- IEC 60945 Fourth Edition (2002)

Marking of product

The manufacturer and Type Designation to be applied to the equipment in a clear visible location and in addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.

Periodical assessment

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.

The scope of the periodical/renewal assessment is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnvgl.com>