



**NOTIFIED BODY No. 1488
INSTYTUT TECHNIKI BUDOWLANEJ
CERTIFICATION DEPARTMENT**

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**CERTIFICATE OF CONSTANCY OF PERFORMANCE
1488-CPR-0718/W**

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product

**Voice alarm control and indicating equipment type
EST ENT VES**

General identification, intended use, essential characteristics and parameters are described in the Annex No. Z-1488-CPR-0718/W which is an integral part of this certificate;

placed on the market under the name or trade mark of:

**UTC Fire and Security B.V.
Kelvinstraat 7
Weert NL-6003 DH
The Netherlands**

and produced in the manufacturing plant:

48-623

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard:

EN 54-16:2008

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the constancy of performance of the construction product.

This certificate was first issued on 05.03.2019 and will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods, nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

HEAD
of the Certification Department

Katarzyna Hatowska, M.Sc. Eng.



DIRECTOR
of Instytut Techniki Budowlanej

Robert Geryło, Ph. D.

Warsaw, 05.03.2019



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which is an integral part of the certificate No. 1488-CPR-0718/W

Voice alarm control and indicating equipment type EST ENT VES

List of essential characteristics of construction product according to EN 54-16:2008

Essential characteristics of the product	Harmonised standard	Assessment
	EN 54-16:2008	
Performance under fire conditions		
General requirements	4	pass
General requirements for indications	5	pass
The voice alarm condition	7: 7.1-7.2, 7.4-7.9	pass
Voice alarm manual control	10	pass
Emergency microphone(s)	12	pass
Signal-to-noise ratio	16.5	pass
Frequency response of VACIE without microphone(s)	16.6	pass
Frequency response of VACIE with microphone(s)	16.7	pass
Response delay (response time to fire)		
Reception and processing of fire signals	7.1	pass
Delays to entering the voice alarm condition	7.4	pass
Output to fire alarm devices	7.8	pass
Emergency microphone(s)	12	pass
Operational reliability		
General requirements	4	pass
General requirements for indications	5	pass
The quiescent condition	6	pass
The voice alarm condition	7	pass
Fault warning condition	8	pass
Disablement condition	9	pass
Interface to external control device(s)	11	pass
Emergency microphone(s)	12	pass
Design requirements	13	pass
Additional design requirements for software controlled VACIE	14	pass
Durability of operational reliability, temperature resistance		
Output power	16.4	pass
Cold (operational)	16.8	pass
Durability of operational reliability, impact and vibration resistance		
Impact (operational)	16.11	pass
Vibration, sinusoidal (operational)	16.12	pass
Vibration, sinusoidal (endurance)	16.13	pass
Durability of operational reliability, electrical stability		
Supply voltage variation	16.14	pass
Electromagnetic compatibility (EMC), immunity tests (operational)	16.15	pass
Durability of operational reliability, humidity resistance		
Damp heat, steady state (operational)	16.9	pass
Damp heat, steady state (endurance)	16.10	pass
Optional functions		
Delays to entering the voice alarm condition	7.4	pass
Phased evacuation	7.5	pass
Manual silencing of the voice alarm condition	7.6.2	pass
Manual reset of the voice alarm condition	7.7.2	pass
Output to fire alarm devices	7.8	pass
Voice alarm condition output	7.9	pass
Indication of faults related to transmission path to the CIE	8.3	pass
Indication of faults related to voice alarm zones	8.4	pass
Disablement conditions	9	pass
Voice alarm manual control	10	pass
Interface to external control device(d)	11	pass
Emergency microphone(s)	12	pass
Redundant power amplifiers	13.14	pass

Declared intended use of the product: Fire Safety

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Components of Voice alarm control and indicating equipment type EST ENT VES

Control units	EST-CU-8LCD, ABT-CU-8, EST-CU-11LT, EST-CU-11LCD
Power system management unit	EST-PF4 Power supply unit frame, EST-PS48800 Power supply, ABT-PSM48E, EST-PSM48 Power supply manager (acc. to EN 54-4, certificate no. 1488-CPR-0395/W)
Memory cards	SD memory card, MicroSD, Industrial grade SLC (Single-level cell), MLC (Multi-level cell) min. 128MB
Communication card	EST-xNET-1Gb/WAN/RS
Fiber modules	Modules technology SFP, SFP WDM (BiDi) and SFP CWDM 1.25Gbps; SFP 10/100/1000Base-T UTP, MultiMode / Single Mode Fiber type SC TX=1550nm/1310nm, TX=1310nm/1550nm, TX=1490nm/1310nm, TX=1310nm/1490nm, TX=1490nm/1550nm, TX=1550nm/1490nm, TX=1510nm/1570nm, TX=1570nm/1510nm; MultiMode/ Single Mode Fiber type SC TX=1550nm/1310nm, TX=1310nm/1550nm, TX=1490nm/1310nm, TX=1310nm/1490nm, TX=1490nm/1550nm, TX=1550nm/1490nm, TX=1510nm/1570nm, TX=1570nm/1510nm with diagnostic connectors DDM; MultiMode/ Single Mode Fiber connector type LC X=1550nm/1310nm TX=1310nm/1550nm, TX=1490nm/1310nm, TX=1310nm/1490nm, TX=1490nm/1550nm, TX=1550nm/1490nm, TX=1510nm/1570nm, TX=1570nm/1510nm; MultiMode / Single Mode Fiber connectors type LC TX=1550nm/1310nm, RX=1550nm/1310nm, RX=1490nm/1310nm, TX=1310nm/1490nm, TX=1490nm/1550nm, TX=1550nm/1490nm, TX=1510nm/1570nm, TX=1570nm/1510nm diagnostics connector DDM, SFP TX=850nm, 1310nm, 1550nm connectors LC
Processor card	EST-xCPU
Digital input card into the slot function	EST-xLogIN-8f
Digital input card into the slot of the control	EST-xLogIN-8c
Digital output card into the slot function	EST-xLogOUT-8f
Digital output card into the slot of the control	EST-xLogOUT-8c
Function card input 4 AUDIO/output 8 AUDIO/RS485	EST-xAudio-4/8-RS
Input card 8 AUDIO	EST-xAudI-8
Control card 4 loudspeaker lines	EST-xCtrLine-4
Control card 2 loudspeaker lines	EST-xCtrLine-2
Amplifiers	EST-PA8080B (8 x 80W), EST-PA8080BE (8 x 80W+BGM), EST-PA8160B (8 x 160W), EST-PA8160BE (8 x 160W+BGM), EST-PA2650B (2 x 650W), EST-PA2650BE (2 x 650W +BGM), EST-PA1650B (1 x 650W), EST-PA1650BE (1x650W+BGM), EST-PA4160B (4x160W), EST-PA4160BE (4x160W+BGM), EST-PA4080B (4x80W), EST-PA4080BE (4x80W +BGM) bridgeable of any number of pairs of channels - Class D
Amplifier module	EST-MWT, EST-MWH
Audio transformer	EST-TR80 – 80W, EST-TR160 – 160W, EST-TR650 – 650W
Fireman microphone	EST-DFMS
Microphone zone	EST-DMS
Microphone zone with touch screen	EST-DMS-LCD
Microphone extension	EST-EKB-20M
GUI module	EST-xLCD
Audio/RS interface	EST-ISLE
End of line module	EST-EOL
Volume control	EST-REG1, EST-REG2
Junction box	EST-REG BOX
Network switches	Switch PoE Gigabit Netgear Prosafe series, CTC Union Technologies Gigabit Ethernet Managed Switch IGS series, Fast Ethernet Managed Switch IFS series
Surge arrester	DEHNrail DR M 2P 150, 255 FM

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Annex No. Z-1488-CPR-0718/W page 3/3
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Voice alarm control and indicating equipment type EST ENT VES

Voice Alarm Control and Indicating Equipment type EST ENT VES
meets following functions with requirements of standard EN 54-16:2008

7.4	Delays to entering the voice alarm condition
7.5	Phased evacuation
7.6.2	Manual silencing of the voice alarm condition
7.7.2	Manual reset of the voice alarm condition
7.8	Output to fire alarm devices
7.9	Voice alarm condition output
8.3	Indication of faults related to transmission path to the CIE
8.4	Indication of faults related to voice alarm zones
9	Disablement conditions
10	Voice alarm manual control
11	Interface to external control device(s)
12	Emergency microphone(s)
13.14	Redundant power amplifiers

Basic parameters

Type of system architecture:	autonomous, concentrated, distributed-network
Software version:	FW 1.1.0
Loudspeaker line control method:	EOL method, impedance method, loop method
Type of system power amplifiers:	
- rated power and class:	

EST-PA8080B to 8 channels of 80W bridgeable any the number of pairs of channels
EST-PA8080BE to 8 channels of 80W bridgeable any the number of pairs of channels (8 x BGM audio inputs)
EST-PA8160B to 8 channels of 160W bridgeable any the number of pairs of channels
EST-PA8160BE to 8 channels of 160W bridgeable any the number of pairs of channels (8 x BGM audio inputs)
EST-PA2650B to 2 channels of 650W bridgeable of channels
EST-PA2650BE to 2 channels of 650W bridgeable of channels (2 x BGM audio inputs)
EST-PA1650B to 1 channel of 650W
EST-PA1650BE 1 channel 650W (1x BGM audio input)
EST-PA4160B to 4 channels of 160W bridgeable any the number of pairs of channels
EST-PA4160BE to 4 channels of 160W bridgeable any the number of pairs of channels (4 x BGM audio inputs)
EST-PA4080B to 4 channels of 80W bridgeable of channels
EST-PA4080BE to 4 channels 80W bridgeable any the number of pairs of channels (4 x BGM audio inputs)

- amplifiers class:	D
Loudspeaker line voltage (V):	50, 70, 100
Power Supply:	
- primary	230V AC -15+10%
- backup	48V DC (from 40 to 57)

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