



Report No. 127160-3R1TRFSAF

PARTIAL TEST REPORT
EN 60998-1:2004
Connecting devices for low-voltage circuits
for household and similar purposes

Reference number: 127160-3R1TRFSAF

E.U.T.: Power distribution box

Mod. TH631

Applicant's name: **Techno S.r.l.**

Address: via Bancora e Rimoldi , 27 – 22070 Guanzate (CO) – Italy

Compiled by (+ signature): **Fausto Pozzi**

Approved by (+ signature): **Fabio Riboldi**

Date of issue: **2009-05-29****Testing Laboratory:** **Nemko S.p.a.**Address: **Via del Carroccio ,4 – I 20046 Biassono (MI)**Applied Standard **Only clauses 15 and 16 of EN 60 998-1:2004 as required by manufacturer**Listed under Directive **2006/95/EC**Non-standard test method: **N/A****Test Results:** **See page 2****Test Report Form No:** **TAS_01_2008-04-09**TRF Originator: **Nemko S.p.a.****The test report merely corresponds to the tested sample.****It is not permitted to copy extracts of these test result without the written permission of the testing laboratory.**

This document is a test report to be included in the Technical Documentation File the manufacturer or his representative in the EU shall prepare and maintain available to the national authorities to give them the possibility to evaluate conformity of the product to the LVD 2006/95/EC


Il presente documento costituisce una relazione di prova da includere nella documentazione tecnica che il fabbricante o il suo mandatario stabilito nella Comunità deve preparare e mantenere a disposizione delle autorità nazionali ai fini ispettivi per consentire di valutare la conformità del prodotto ai requisiti della direttiva Bassa Tensione 2006/95/CE.



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Safety -- TEST REPORT

Test Report No. : 127160-3R1TRFSAF	2009-05-29 Date of issue
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Test item description:	Power distribution box with 1 input and 2 outputs
Trade Mark	
Manufacturer.....	Techno S.r.l.
Model/Type reference.....	TH631
Part number	THH.631.B3A.AG
Ratings.....	Max 24 A T 85 °C 2,5 mm ² (internal cable) IP65 2P+PE

Test Results according to the standards of page 1:	POSITIVE
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General Comments

The CE marked component has been declared by its manufacturer in conformity with the applicable national legislation and it is given the presumption to satisfy the standard listed in table on page 9. It is responsibility of product manufacturer to verify conformity of the component with a.m. standard. Certificates/CE conformity declarations/manufacturers declarations of listed components shall be included in the TCF of the product.

Il componente marcato CE è stato dichiarato dal suo costruttore conforme alla legislazione nazionale vigente; pertanto si presume soddisfare i requisiti della norma di riferimento indicata nella tabella a pagina 9. La verifica di questa conformità è responsabilità del fabbricante del prodotto.

I certificati/dichiarazioni di conformità/dichiarazioni del costruttore dei componenti indicati devono essere inserite nella documentazione tecnica del prodotto.

Additional Comments relevant to Test Results:

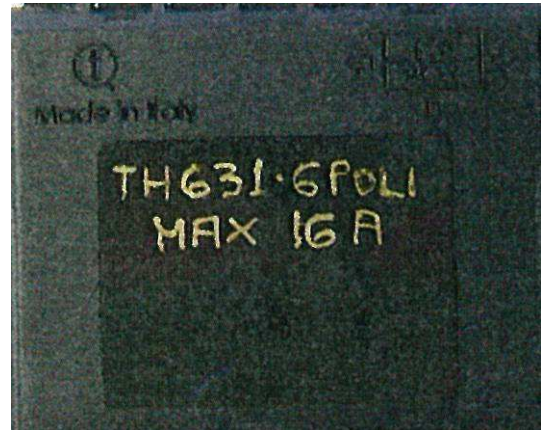
According to the directive 2006/95/EC, certificates or CE conformity declarations of components with asterisk of table on page 9 shall be included in the TCF.

La documentazione tecnica ai sensi della direttiva 2006/95/CE deve essere integrata con il certificato e/o la dichiarazione di conformità dei componenti indicati con asterisco nella tabella a pagina 9.



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The following variants are covered by this test report:			
With partial tests:			
No.	Model	Ratings	Differences
1.	THH.631.B6A.AG	Max 16 A T 85 °C 2,5 mm ² (internal cable) IP65	<ul style="list-style-type: none"> Rated current: 16A instead of 24A. 5P+PE at place of 2P+PE.
Without tests, for analysis by Testing Laboratory:			
No.	Model	Ratings	Differences
2.	THH.631.B2A.AG	Max 24 A T 85 °C 2,5 mm ² (internal cable) IP65	<ul style="list-style-type: none"> 4P+PE at place of 2P+PE
3.	THH.631.B5A.AG	Max 16 A T 85 °C 2,5 mm ² (internal cable) IP65	<ul style="list-style-type: none"> Rated current: 16A instead of 24A. 4P+PE at place of 2P+PE

Copy of marking plate:**THH.631.B3A.AG****THH.631.B6A.AG****General product information:**

The equipment is a power distribution box with 1 input (plug) and 2 output (socket). A silicone cable of 2,5 mm² is used to perform electrical connections inside the box.

Each connectors both the plug and the socket are 3 poles connector (2 poles + earth).

During the test earth pole was empty.

Internal wirings were not considered under test.

Connectors were used to perform the tests (not under test):

- OUTPUT: THB.405.A2B.AG (2)
- INPUT: THB.405.B2B.AG (1)

The test are repeated on THH.631.B6A.AG: differences from THH.631.B3A.AG are the rated current (16A instead of 24A) and the number of poles (5 poles + earth instead of 2 poles + earth).

For these tests following connectors were used (not under test):

- OUTPUT: THB.405.A2E.AG (2)
- INPUT: THB.405.B2E.AG (1)



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Possible test case verdicts:

- test case does not apply to the test object..... : N (Not Applicable)
- test object does meet the requirement..... : P (Pass)
- test object does not meet the requirement : F (Fail)

Testing

Date of receipt of test item : 2009-04-24

Date(s) of performance of tests : 2009-05-04 to 2009-05-14

Statement of the measurement uncertainty:

Note: The following Nemko technical procedures were also applied during testing:

- WML0177 General routines for using instruments at Nemko.
- WML1002: Measurement Uncertainty – Policy and Statement.



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Cl.	Requirement – Test	Result – Remark	Verdict
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15	TEMPERATURE RISE AND ELECTRICAL PERFORMANCES		P
15.1 to 15.4	Terminal	Multiway	—
	T marking (°C)	85	P
	Largest cross-sectional area (mm ²)	2,5	—
	Conductors	1 m	P
	Torque (Nm); table number		—
	Rated connecting capacity (mm ²)	2,5	—
	Test current (A)	24 / 16	—
	Temperature rise does not exceed 45 K (1)	See appended table 15A and 15B	P
	Temperature rise does not exceed 45 K (2)		N
	Temperature rise does not exceed 45 K (3)		N

16	RESISTANCE TO HEAT		P
16.1	Connecting devices are sufficiently resistant to heat		P
16.2	Heating cabinet test	See appended table 16.2	P
	After the test: no changes impairing further use and markings still legible		P
16.3	Ball-pressure test (IEC 60695-10-2) for parts necessary to retain current-carrying parts and parts of the earthing circuit in position	See appended table 16.3A	P
	Impression diameter not exceed 2 mm		P
	Ball-pressure test (IEC 60695-10-2) for parts not necessary to retain current-carrying parts and parts of the earthing circuit in position	See appended table 16.3B	P
	Impression diameter not exceed 2 mm		P



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Cl.	Requirement – Test	Result – Remark	Verdict
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15A	TABLE: Temperature rise test			P	
	Model/type reference	THH.631.B3A.AG		—	
	Conductor length (m).....	1		—	
	Measurement made at temperature (°C).....	85		—	
	Largest cross-sectional area (mm ²)	2,5		—	
	Test current (A).....	24		—	
	Temperature rise dT of part/at:	Measured dT (K)			Allowed dT (K)
		Sample 1	Sample 2	Sample 3	
	Current carrying part of Output connector	25	—	—	45
	Insulating material of Output connector	22	—	—	45
	Current carrying part of Input connector	22	—	—	45
	Insulating material of Input connector	23	—	—	45
	Internal enclosure	6	—	—	45
	External enclosure	5	—	—	45
Supplementary information: the temperature rise on internal wire with T marking 180°C was 113°C.					

15B	TABLE: Temperature rise test			P	
	Model/type reference	THH.631.B6A.AG		—	
	Conductor length (m).....	1		—	
	Measurement made at temperature (°C).....	85		—	
	Largest cross-sectional area (mm ²)	2,5		—	
	Test current (A).....	16		—	
	Temperature rise dT of part/at:	Measured dT (K)			Allowed dT (K)
		Sample 1	Sample 2	Sample 3	
	Current carrying part of Output connector	23	—	—	45
	Insulating material of Output connector	15	—	—	45
	Current carrying part of Input connector	29	—	—	45
	Insulating material of Input connector	19	—	—	45
	Internal enclosure	15	—	—	45
	External enclosure	7	—	—	45
Supplementary information: the temperature rise on internal wire with T marking 180°C was 108°C.					



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Cl.	Requirement – Test	Result – Remark	Verdict
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16.2	TABLE: Heating cabinet test				P
	Test temperature (°C).....	: T + 45 = 85 + 45 = 130			—
	Model/type reference	Sample 1	Sample 2	Sample 3	—
	THH.631.B3A.AG	130°C	—	—	P
	THH.631.B6A.AG	130°C	—	—	P
Supplementary information: a slight deterioration of the gasket was found.					

16.3A	TABLE: Ball pressure test of insulating materials			P
	Test temperature (°C).....	: T + 45 = 130		—
	Part under test	Material designation / manufacturer	Impression diameter (mm)	
	Current carrying part of input/output connector (brown)	PA66GF	1,2	
	Current carrying part of input connector (black)	PA66GF	1,1	
Supplementary information: ---				

16.3B	TABLE: Ball pressure test of insulating materials			P
	Test temperature (°C).....	: 70		—
	Part under test	Material designation / manufacturer	Impression diameter (mm)	
	Insulating material of Input connector / Enclosure	PA66	1,0	
Supplementary information: ---				



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TABLE: Components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity
Enclosure (black)	Techno S.r.l.	---	PA66, V2, GWT 850°C, 125°C	EN 60998-1	Tested in appliance
Plug connection (1)	Techno S.r.l.	THB.023.A3B	PA66GF, V0, GWT 960°C, 125°C	EN 61984:2001	IMQ
Socket connection (2)	Techno S.r.l.	THB.023.A3B	PA66GF, V0, GWT 960°C, 125°C	EN 61984:2001	IMQ
Internal wiring	Siltek S.p.a.	SIAF	2,5 mm ² , 180°C	EN 60998-1	Tested in appliance
Heat-Shrinkable	RTE S.n.c.	STP125	125°C, VW-1, polyolefin	ANSI/UL 224	UL
THH.631.B6A.AG					
Plug connection (1)	Techno S.r.l.	THB.028.A5A	PA66GF, V0, GWT 960°C, 125°C	EN 61984:2001	IMQ
Socket connection (2)	Techno S.r.l.	THB.028.B5A	PA66GF, V0, GWT 960°C, 125°C	EN 61984:2001	IMQ



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ANNEX1: PHOTOS	
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