

Report

Project Designation

Examination of the tightening system of panel
mounting switches for compliance with the
requirements for degree of protection "IPX6"

Client

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Order from / No 19.5.2008/Mr. Waldecker

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The results relate exclusively to the terms tested.

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Description of Project

Examination of the tightening system of panel mounted switches for compliance with the requirements for degree of protection IPX6 according to EN 60947-1, Annex C.

Types of Switches

As the tightening system and its dimensions are identical, (See Fig. 1), this examination covers all panel mounted switches of the following scheme:

Type	Design	Handle	Switching program
LTS20 (20A)	E panel mounting	H1 lockable 2 padlocks (black/grey)	A ON-OFF + no poles
LTS25 (25A)		HN1 lockable 2 padlocks (red/yellow)	U change over with OFF
LTS32 (32A)		H4 lockable 3 padlocks (b/g)	W change over no OFF
LTS40 (40A)		HN4 lockable 3 padlocks (r/y)	... and other possibilities
LTS63 (63A)		... not lockable	
LTS80 (80A)			
M10H (20A)			
M20 (32A)			
N20 (32A)			
N33F(50A)			

Table 1: Overview of types of panel mounted switches covering the examination

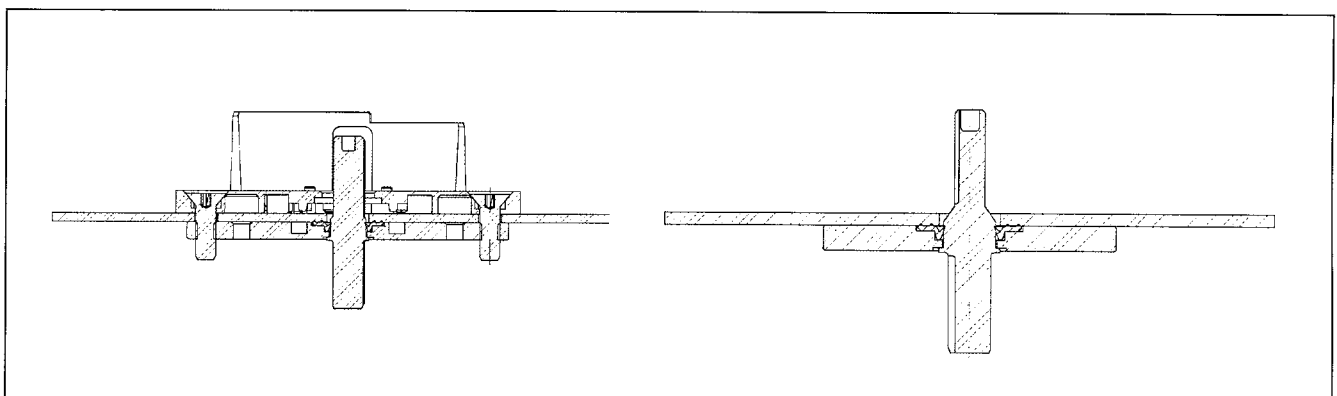


Fig. 1: Features of tightening system

Test Samples

For representation of the covered types of panel mounted switches, the test was performed on two test samples of the type:

LTS20 E HN4 A3

The test samples were mounted in an enclosure (CUBO D, IP67), representing the outer side of a panel. (See. Fig. 2)



Fig. 2: Test sample, mounted in enclosure

The test samples were received on Mai 19, 2008.

Test Standard, Test Description

Primary base for the test was EN 60947-1(2007), Annex C, where the basic requirements for testing the degree of protection are stated.

The detailed execution of the test was done according to EN 60529 (2000), subclause 14.2.6 (degree of protection, IPX6) with following test parameters:

- Hose nozzle 12,5 mm diameter
- Flow rate: 100 l/min \pm 5 l/min
- Test duration: 3 min
- Distance between nozzle and test sample: between 2,5 m and 3 m
- The water jet was directed to the front side (mounting surface of switches) of the enclosure

Date of test performance: Mai 19, 2008



Fig. 3: Test performance


Test Result

After performing the test, the surface of the enclosures were dried with towel paper and afterwards opened. No ingress of water was detected.

The tightening system of the panel mounted switches of types LTS20,..., LTS80, M10H, M20, N20 and N33F, corresponds with the requirements for degree of protection IPX6 according EN60947-1(2007), Appendix C.

Project Manager

Head of Business Field


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