

RELIABILITY EVALUATION STATEMENT

[2] **Safety functions in equipment, systems or components**

[3] Statement Number: **EPTI 18 RASS 0352 issue 1**

[4] Equipment: **Interface Relay**
Model: **7S.43 and 7S.63 Series**

[5] Manufacturer: **FINDER S.P.A.**

[6] Address: **Via Drubiaglio, 14 – 10040 Almese (TO) Italy**

[7] This equipment and any acceptable variation thereto are specified in the annex to this Statement and in the documents reported in it.

[8] EUROFINS PRODUCT TESTING ITALY S.r.l. performed a reliability assessment of the technical documentation provided by the manufacturer and found the apparatus in compliance with the Safety Integrated Levels hereinafter indicated.

The evaluation details are recorded in the assessment report n. EPT.20.REL.01/2023036

[9] Reference Standards: **IEC 61508 Series:2010**

[10] Apparatus identification and reliability parameters:

Type A device

Interface Relay Series	7S.43, 7S.63
Type of Load	AC1, AC15, DC1, DC13
Route	1H
SFF	1002
DC	High
λ_s	1,59E-05
λ_{dd}	1,51E-05
λ_{du}	7,97E-7
β_d	5%
PFH	8,3E-8

SIL 3 Capable

[11] This statement relates only to the design and the assessment of the tests of the specific device; the factory production control of the factory is not object of this certificate

[12] **Turin, 2020-07-29**



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This Statement has 3 pages and it is reproducible only in its entirety. Conditions of validity are reported below.

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System Description

The relay interfaces series 7S.43 and 7S.63 are made of two relays with forced contacts connected as below described:

The coils of the two relays are connected in parallel to A1 (positive) and A2 (negative) terminals of the interface.

Between the terminals 11 and 12 there is the series of the two NC contacts of the two relays installed inside the device; this series must be used as feed-back contacts to monitor the correct operation of the two relays.

Between the terminals 23 and 24 there is the series of the two NO contacts of the two relays installed inside the device; this series represents one of the two safety output channels.

Between the terminals 33 and 34 there is the series of the two NO contacts of the two relays installed inside the device; this series represents the second one of the two safety output channels.

The contact between the terminals 47 and 48 is one of the two contacts of the relays installed inside the interface; it can only have signaling scope.

The coil must be powered by continuous current; according to the different models different feeding voltages can be present.

Product code	Product characteristics
7S.43.9.012.021x	2NO (Safety) + 1NC (Monitoring); 12Vdc, Spring terminals
7S.63.9.012.021x	2NO (Safety) + 1NC (Monitoring); 12Vdc, Screw terminals
7S.43.9.024.021x	2NO (Safety) + 1NC (Monitoring); 24Vdc, Spring terminals
7S.63.9.024.021x	2NO (Safety) + 1NC (Monitoring); 24Vdc, Screw terminals
7S.43.9.048.021x	2NO (Safety) + 1NC (Monitoring); 48Vdc, Spring terminals
7S.63.9.048.021x	2NO (Safety) + 1NC (Monitoring); 48Vdc, Screw terminals
7S.43.9.110.021x	2NO (Safety) + 1NC (Monitoring); 110Vdc, Spring terminals
7S.63.9.110.021x	2NO (Safety) + 1NC (Monitoring); 110Vdc, Screw terminals

The last symbol of the code (x) can assume value 1 or 4; 1 means one NO aux contact, 4 means one NC aux contact; the AUX contact has not safety functions

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Assessment Report n° EPT.20.REL.01/2023036

This Statement is released after the positive result of the conformity assessment to the technical standard above listed performed by Eurofins Product Testing Italy S.r.l., and reported in the Assessment Report above cited.



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[17] **Other assumptions for the evaluation:**

T cycle: 6 min

Proof test time T1: 26280 h (3 years)

Mean Time To Recover MTTR: 8 h

Mean Time to Repair MTR: 0,5 h

Conversion from B_{10d} to λ_d in accordance with IEC 62061:2005

[18] **Descriptive documents**

The equipment objects of this Statement is described by the following documents.

Type of document	Identification	Title	Revision/date
Instruction manual	IB7S3XVXXX	7S.43/63	07/2020
Technical note	IT 086	7S.43.9.XXX.021X 7S.63.9.XXX.021X Interfaccia modulare di sicurezza con morsetti a molla o a vite per applicazioni fino a SIL 3	0/02-07-2018

[20] **Terms and conditions**

The product liability rests with the Manufacturer, his representative or, in the absence of a representative, with the importer, in accordance with the General Product Safety Directive 2001/95/CE.

The following conditions may render this Statement invalid:

- changes in the design or construction of the product
- changes or amendments to the Standards.

[21] **Statement History**

Type of document	Issue	Type of modification
2018-07-27	0	First emission
2020-07-29	1	The proof time has been changed and the reliability parameters have been calculated on the basis of the new parameters Some editorial changes in the certificate



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