



ELECTROTECHNICAL TESTING INSTITUTE
Pod Lisem 129
171 02 Praha 8 - Troja

No. of pages: 7
No. of annexes/No. of an. pages:-/-

No. of the Test Report: 501698-01/01

Issued: 30.4.2015



TEST REPORT



Name of product: Ground fault equipment
Type of product: HIG9x
Ratings: 85 up to 265 V, 50 Hz, IP20
Serial number: --
Manufacturer: HAKEL spol. s r. o.,
Bratří Štefanů 980, 500 03 Hradec Králové, Slezské
Předměstí, Czech Republic
Production site: --
Ordering firm: HAKEL spol. s r. o.,
Bratří Štefanů 980, 500 03 Hradec Králové, Slezské
Předměstí, Czech Republic
Number of tested samples: --
Samples submitted on: --
Location of testing: EZÚ
Tested from 28.4.2015 through 30.4.2015
Other data: EZÚ test report No. 203632-01/01.
The product was tested according to: ČSN EN 61010-1:03 cl. 5.1.2, 5.1.3, 5.1.5.2, 5.3, 5.4, 6.1, 6.2.1, 6.4, 6.7.1.2, 6.7.1.3, 6.8.2, 6.8.3.1, 8.2.2, 8.3.1, 10.5.2 a), 10.5.3 1), 10.5.3.1, 14.6;



Compiled by: Petra M. Slavková



Approved by: Ing. František Nekola
Testing laboratory manager

Test results stated in the test report apply only to the tested subject and unless specified otherwise in the test report, the tests were performed using the method and under the conditions determined in the test regulations, technical norm, instructions for use and information provided by the manufacturer on the tested subject and using accessories required by the manufacturer.
Without written consent, this report must not be reproduced in any other way than as a whole.

ČSN EN 61010-1ed.2:11			
Clause	Prescription - Test	Findings	Result
5	Marking and documentation		
5.1 5.1.2	- Manufacturer's name: HAKEL spol. s r.o. - type HIG9x The marking shall be visible from outside or after removal the cap without using a tool. Markings is part of the device, it shall not be placed on parts which can be removed without using a tool.	yes	pass
5.1.3	Mains supply a) nature of supply: AC b) rated supply voltage: 85 - 265 V, 50 Hz Max. operational monitored voltage of the IT net 275V Power consumption: max. 5 VA Measuring voltage: 12 V DC Measuring current: < 0,6 mA Critical insulating resistance: R_{crit} adjustable 5 to 300 k Ω Measurement accuracy: 5 k Ω ... 10 k Ω 2 k Ω 1 M Ω ... 900 k Ω \pm 10% Hysteresis of the monitored insulation resistance: R_{Hyst} adjustable 0 to +100% R_{crit} Signaling response delay: t_{ON} adjustable 0 to 60 second IP code: IP 20 Weight: 160 g Operational temperature: -10 to +50 °C Method of assembling: rail DIN 35 Recommended section of the connected conductor: 1 mm ² Dimensions: 36 x 90 x 64 mm Output: Signaling potential-free change-over contact Electric strength 4 kV against internal circuits and supply circuits. Overvoltage category: III Pollution degree: 2 More technical information in the manufacturer's instruction.	yes	pass
5.1.5.2	Terminals The ground fault equipment has screw terminals type ML 25, Euroclamp with test certificate No. XCFR2.E178356.  	yes	pass
5.3	Durability of markings The test is made by rubbing the marking by hand for 30 s with a piece of cloth soaked in petroleum spirit. The required markings shall be clear and legible after the test. Labels shall not release or curl on edges.	yes	pass
5.4	Documentation Demanded documentation was delivered with samples. Documentation contains all required information.	yes	pass

8	Resistance to mechanical stresses		
8.2	Enclosure rigidity test		
8.2.1	Static test		
	Tested in ambient temperature (40 ± 2) °C with rod diameter 12 mm and pressure 30 N. It's not possible to touch live parts on the front side of the device.	-----	-----
8.2.2	Impact test		
	Tested point is subjected to the impact of steel ball with weight 500 g and diameter of 50 mm. According to the table 15 corresponding IK07. Vertical fall speed 400 mm. After the impact on the transparent window is display broken. There is no possibility to touch hazardous live parts - demands on insulation are fulfilled.	yes	pass
8.3	Drop test		
8.3.1	The device is placed in its position on a smooth, hard rigid surface of concrete or steel. It is then tilted about each bottom edge in turn so that the distance between opposite edge and the test surface is 100 mm for equipment up to 20kg so that the angle made by the bottom and test surface is 30°. It is then allowed to fall freely onto the test surface.	Yes No damage	pass
10	Equipment temperature limits and resistance to heat		
10.5	Resistance to heat		
10.5.2	Non-metallic enclosures		
10.5.2 a)	Tested in ambient temperature (70 ± 2) °C for 7 hours. After removing in 10 minutes performed test according to cl. 8.2, 8.3	Yes Sample without changes	pass
10.5.3 1)	Insulating material		
	The ball pressure test was performed according to pic. 14 with result below: Tested part: enclosure Temperature (°C): 125 ± 2 Diameter of the impression: The diameter of the ball impression shall not exceed 2 mm. Both tested parts have impression smaller than 2 mm.	Yes 1,0 mm	pass
14	Components and subassemblies		
14.6	Mains transformers tested outside equipment		
	Logical circuits supplied with electronic transformer MYRRA 47154. Certificate No. 40034334. Transformer has license to use following marks.  	yes	pass

Results of the tests are taken from EZÚ test report No. 203632-01/01 dated 15. 10. 2012



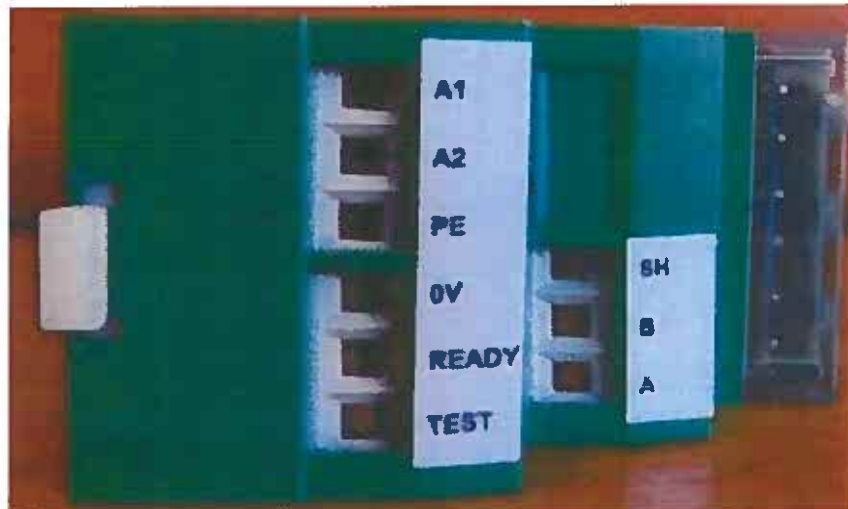
Picture No. 1 The ground fault equipment HIG9x



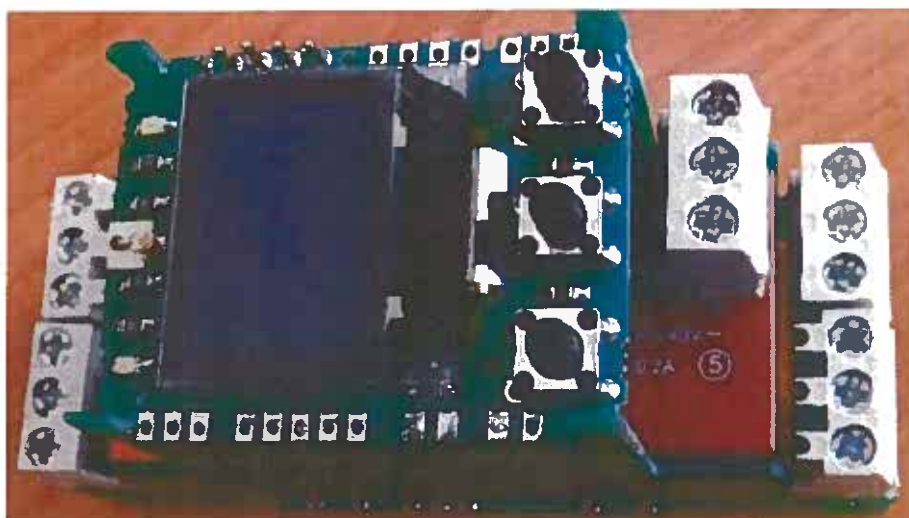
Picture No. 2 The ground fault equipment HIG9x



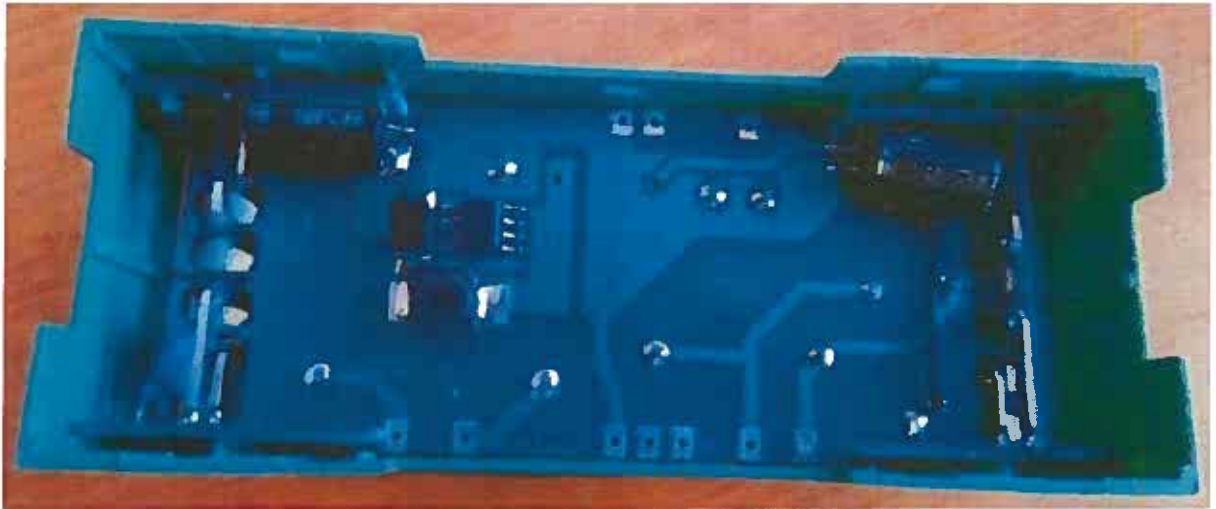
Picture No. 3 The ground fault equipment HIG9x



Picture No. 4 The ground fault equipment HIG9x



Picture No. 5 The ground fault equipment HIG9x



Picture No. 6 The ground fault equipment HIG9x

Compiled by: *P.M.S.* Petra M. Slavková
Date: 30. 4. 2015