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Technical Service Report

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MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E INOVAÇÃO Centro de Tecnologia da Informação Renato Archer

Divisão de Qualificação e Análise de Produtos Eletrônicos

Rodovia Dom Pedro I, Km 143,6 , Caixa Postal 6162, Campinas, SP
CEP 13069-901, Tel: 19-3746-6059, Fax 19-3746-6051
CNPJ: 04.822.500/0001-60 I.E.: Isento

Analyst (s): R. Medeiros and D. Vilani.	Report Date: March 14, 2013	Reviser: S. Eleutério Filho	Revision Date: March 14, 2013
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Customer: Selcon Sistemas Eletrônicos de Controle Ltda.	Requester: Mr. Walter de Oliveira Filho / Mrs. Debora A. Souza
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Address / Phone Number: Rua Américo Samarone, 502 – Vila Moinho Velho - São Paulo – SP – Brasil. Telephone: (11) 6162 1616
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Product (s): Electronic module	Model (s): PRG-SE-02	Quantity(s): 3	Date Received: December 20, 2012
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1.Objective

Submit electronics modules PRG-SE-02 to life test.

2.Identification Of Product (See Attached Photographs)

Identification: 60982, 60983 and 60984.

3.Equipment (s)

Climatic Chamber Vötsch VC 7033, temperature range +180°C to -70°C uncertainty $\pm 1,5^{\circ}\text{C}$.

4. Methodology

Life test with 10,000 cycles at 60°C and 10,000 cycles at 0°C. During the test, the voltage will be configured to -15% of nominal voltage to 5,000 cycles hot and cold, and +10% of nominal voltage to the 5,000 cycles hot and cold remaining. Each cycle is 30 seconds approximately. Before the beginning of test, 90,000 cycles at 60°C and 90,000 cycles at 0°C were executed at the same conditions in these same samples (identified in item 2).

Therefore, it was performed a total of 100,000 cycles at 60 ° C and 100 000 cycles at 0 ° C according to the test conditions described above.

5.Test Execution: From February 20, 2013 to February 27, 2013

6.Conclusion

The samples were tested per above specification. No visual damages were observed after test.

7.Service Manager

Rafael Cortes de Medeiros

Divisão de Qualificação e Análise de Produtos Eletrônicos

8.Annex:

Photographs



Figure 1. Samples as delivered.

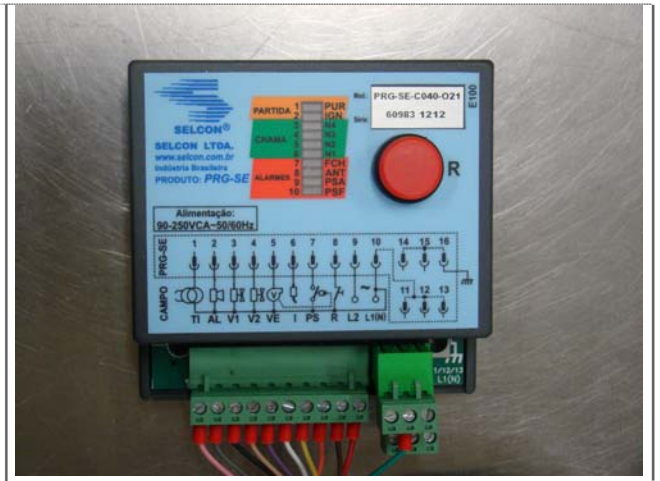


Figure 2. Sample - electronic module PRG-SE-02.



Figure 3. Identification label.



Figure 4. Initial setup of polarization: -15% of nominal voltage.



Figure 5. Samples arranged into chamber test.



Figure 6. Chamber used to test.



Figure 7. No damages observed in samples after test.



Figure 8. Counter of sample 60982 – 186,258 cycles (the time to each cycle was bigger than 30 seconds).



Figure 9. Counter of sample 60983 – 201,843 cycles.



Figure 10. Counter of sample 60984 – 202,468 cycles.

9. General Remarks

The results of this report apply only to the above identified samples.

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10. End of Report

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