



राष्ट्रीय परीक्षण शाला (प.क्षे.) मुंबई  
National Test House (W. R.) Mumbai



GOVERNMENT OF INDIA  
NATIONAL TEST HOUSE  
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**TEST CERTIFICATE**

17873

Test Certificate  
No: BTH/E/2011/31  
Date of Issue: 27/06/2011  
Code No.  
Page 1 No. of 3 Pages

1. Issued to  
(Name and address of the organisation) : M/s. M. G. ELECTRICA  
F-41, MIDC Area,  
Satpur, Nasik-7  
Maharashtra, India
2. Party's Ref. No. : Nil dtd. 18.04.2011
3. Description of the test item : Terminal connectors for cables made of copper stated to be MGT-240-17, of size 240mm<sup>2</sup> 'Copper Tubular Lug', crimped to both ends of flexible copper conductor cables of suitable area of cross section.
4. Identification of the test item : —
5. Date of receipt of test Item : 19.04.2011
6. Identification of Test Method : IEC-61238-1-2003
7. Sampling Procedure where relevant : N/A

*Signature*

*Signature*



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One sample consisting of 10 nos. of copper terminal connectors, "MG" brand crimped with flexible Copper conductors of area  $240 \text{ mm}^2$ .

Out of 10, six connectors were selected at random, marked 1 to 6 for identification purpose.

As desired, the sample was subjected to the following tests generally as per IEC 61238-1-2003 with the results noted below:-

1. Electrical test requirement:- (CL6)

a) Connector Resistance factor :- (K)

Connector	No. of Cycles											
	0	250	325	400	475	550	625	700	775	850	925	1000
1	0.893	0.901	0.91	0.901	0.91	0.91	0.919	0.91	0.919	0.919	0.919	0.928
2	0.893	0.901	0.91	0.901	0.91	0.91	0.919	0.91	0.919	0.919	0.919	0.928
3	0.893	0.901	0.901	0.901	0.901	0.91	0.919	0.91	0.919	0.91	0.919	0.919
4	0.893	0.901	0.901	0.901	0.901	0.91	0.919	0.91	0.919	0.91	0.919	0.919
5	0.901	0.901	0.91	0.901	0.91	0.901	0.91	0.919	0.91	0.919	0.919	0.928
6	0.901	0.901	0.91	0.901	0.91	0.901	0.91	0.919	0.91	0.919	0.919	0.928

b) Initial scatter  $\delta$  (Specified Maximum Value: 0.30): Observed value : 0.008

c) Mean Scatter  $\beta$  (Specified Maximum Value : 0.30): Observed value : 0.003

d) Change in Resistance factor, D:- (Specified Maximum Value : 0.15)

Connector	1	2	3	4	5	6
D	0.032	.032	0.043	0.043	0.035	0.035

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e) Resistance factor Ratio :- (Specified Maximum Value : 2.0) : Observed maximum value : 1.04

Connector	No. of Cycles										
	250	325	400	475	550	625	700	775	850	925	1000
1	1.01	1.02	1.01	1.02	1.02	1.03	1.02	1.03	1.03	1.03	1.04
2	1.01	1.02	1.01	1.02	1.02	1.03	1.02	1.03	1.03	1.03	1.04
3	1.01	1.01	1.01	1.01	1.02	1.03	1.02	1.03	1.02	1.03	1.03
4	1.01	1.01	1.01	1.01	1.02	1.03	1.02	1.03	1.02	1.03	1.03
5	1.00	1.01	1.00	1.01	1.00	1.01	1.02	1.01	1.02	1.02	1.03
6	1.00	1.01	1.00	1.01	1.00	1.01	1.02	1.01	1.02	1.02	1.03

f) Maximum temperature  $\theta_{max}$  :- (Specified Value of  $\theta_{ref}$ : 120°C-140°C)

Connector	1	2	3	4	5	6	Ref. Conductor Temp. °C
$\theta_{Max}$ : °C	106	112	111	106	105	112	122

2. Mechanical test (cl.7):-

Tensile force of 14.4 KN was applied : No Slipping occurred during the test for a period of one minute.

Note : i) Following Plots are enclosed herewith and they form a part of the Test Certificate.

a) No. of cycles V/s connector Resistance Factor, CRF(K) (Annexure-I)

b) No. of cycles Vs Connector Temperature .(Annexure-II)

ii) The crimping Tool used for making the crimped joint is MGHC -300 Hydraulic crimping Tool.

iii) The average ambient conditions of the laboratory during the period of the test was:

Temperature, °C : 31

Relative humidity, % : 68

Remarks:- The sample complies with the requirement of the specification IEC: 61238-1-2003 in respect of the tests carried out.

Tested by : D.G.Desai  
Scientific Officer (Electrical)

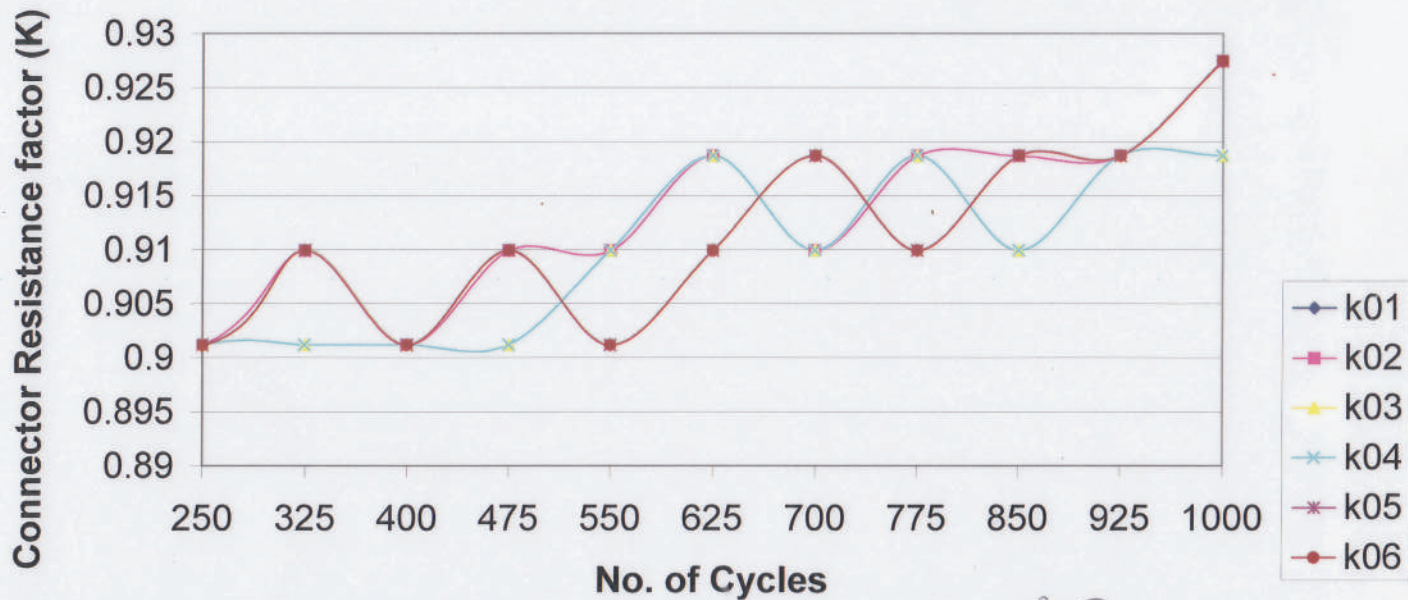
Checked by : S. K.Menon  
Scientist SB(Electrical)

Approved by : D.G.Basumatory  
Scientist SD (Electrical)

Note: 1. This test certificate or report may not be published for commercial purposes except in full, unless permission for the publication of an approved abstract has been obtained from the Director, National Test House, Andheri(E), Mumbai.

Note: 2. This Test Certificate applies only to sample tested as mentioned in the "PRESS NOTE" shown at Page (v) in the Govt. of India Publication 'Schedule of Testing Charges levied by 'National test House and related information

BTH/E/2011/31 (Annexure-I)  
No. of cycles Vs Connector resistance factor

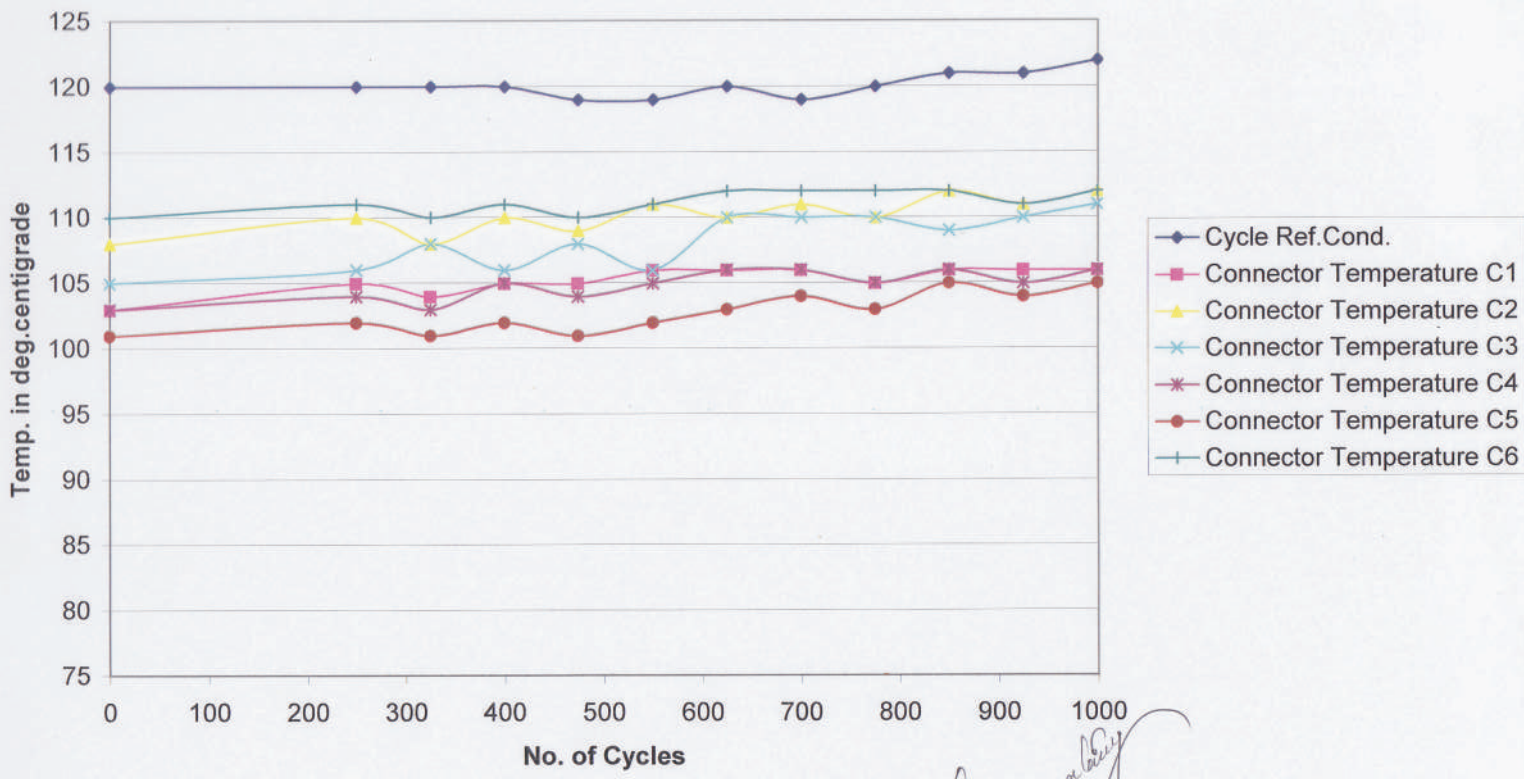


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*Sanjay*

BTH/E/2011/31 (Annexure - II)  
Connector Temp. Vs No. of cycles.



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