

**CONTROL EQUIPMENT ENGINEERING DIVISION
TEST AND INSPECTION SPECIFICATION
No. 865722 Rev 00**

TYPE TEST SCHEDULE

FOR

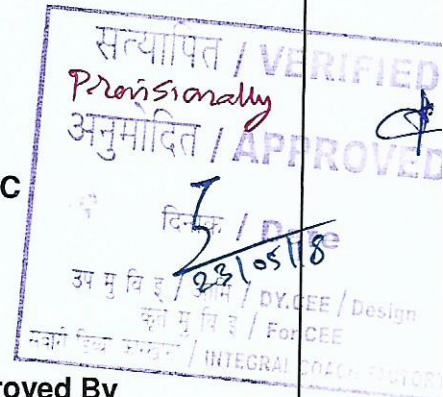
MASTER CONTROLLER (JOYSTICK TYPE)

FOR

TWIN POWER PACK-NEW UNDERSLUNG DETC

FOR

ICF CHENNAI



Prepared By

**Mukesh Modi
(Dy. Engr.)**

Checked By

**Diwaker Kumar
Sr.Engr.(D)/CEE**

Approved By

**S. K. Rai
DGM(D)/ CEE**

Distribution :

1. SWM Testing - 01
2. Office Copy - 01

Date of Rev.00 : 17.05.2018
Rev. No. :
Rev. Date :

Despatch Ref : CEE/5.2/US-DETC
Date : 17.05.2018

DATE	DATE:	DATE:	R E V I S I O N S	17.05.18
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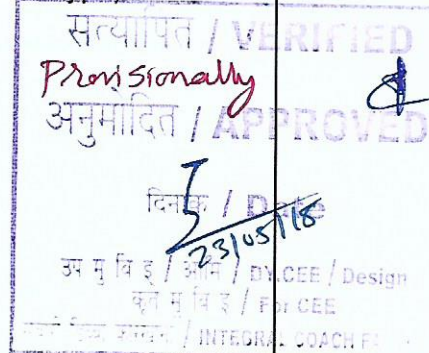
TYPE TEST SCHEDULE FOR MASTER CONTROLLER (JOY STICK TYPE)
FOR TWIN POWER PACK NEW UNDERSLUNG DETC

1.0 Technical Particulars:

- | | | |
|-----------------------------|---|-----------------------------------|
| a. Work Order No. | - | As Applicable |
| b. Customer | - | ICF Chennai. |
| c. Description of Equipment | - | Master Controller(Joy Stick type) |
| d. Quantity | - | As per Work Order |
| e. GA Drg No | - | 25730030102 Rev.00 |
| f. Schematic Drawig No. | - | 35900030175 Rev.00 |

2.0 Preliminary Check

- 2.1 Before conducting the Type test on Master Controller. The same shall be subjected to Routine tests as per Routine T&I Specification No.865721 Rev.00.
- 2.2 Visual Inspection of the Master Controller shall be carried out to check workmanship and conformity to dimensions in drawings and clearances on all moving parts.



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2.3 Contact Pressure, Contact Gap, Cam Sequence and Mechanical Interlocking shall be checked in line with Routine Test & Inspection Specification.

3.0 Milli Volt Drop Test

The Milli Volt drop test shall be conducted on 5 Nos. of Cam Switch Contacts before and after the Temperature Rise Test at 5 Amp and values shall be recorded.

4.0 Temperature Rise Test:

Cam Switch contacts shall be connected with variable DC supply and resistive load. Power supply is adjusted to maintain 5 Amp Current in the circuit. Temperature shall be recorded at an interval of 30 minute till temperature reaches a steady state value. Temperature rise shall not exceed 60 °C..

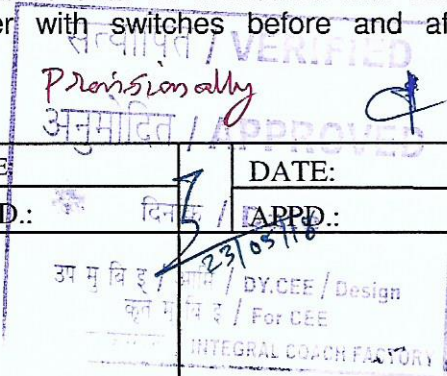
5.0 Dielectric Test

The Master controller shall withstand the dielectric test as under.

- I. 1.5 kV AC between all Cam Switch shorted together and Frame for one minute.
- II. 1.5 kV AC between two adjacent Cam Switch contacts for one minute.

6.0 Insulation Resistance Test:

Insulation Resistance shall be measured with 1000 Volts Meggar on complete Master Controller with switches before and after Dielectric test Insulation



 Provisionally
 अनुमोदित / APPROVED
 23/05/18
 उप मुख्यालय / उप मुख्यालय / DY.CEE / Design
 कल मुंबई / For CEE
 INTEGRAL COACH FACTORY

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resistance shall be measured between all switches terminals shorted together and body of Master controller. IR value shall be more than 200 Mega Ohms.

7.0 Mechanical Endurance Test :

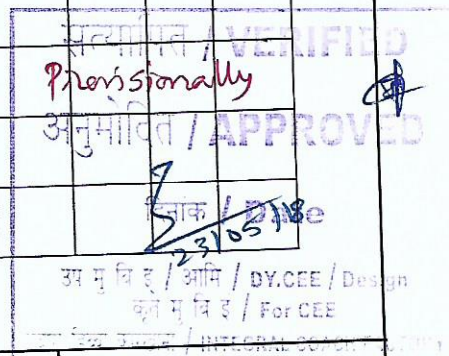
This test shall be carried out after temperature rise and dielectric tests.

i) 20,000 operations for Throttle Handle(Joy Stick) without lubrications as per cycle "0", upto "8th" notch and back to "0" to be performed. The rate of operation shall be 5 cycle per minute.

ii) 20,00 operations for Forward/ reverse knob shall also be performed.

Contact pressure and contact gap of five different contacts shall be recorded as under:

Sl. No	Condition	CONTACT PRESSURE (gms)					CONTACT GAP (m.m)				
		1	2	3	4	5	1	2	3	4	5
1	Before Commence Of test										
2	After 5,000 Operations										
3	After 10,000 Operations										
4	After 15,000 Operations										
5	After 20,000 Operations										



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8.0 Test on Auxiliary Switch:

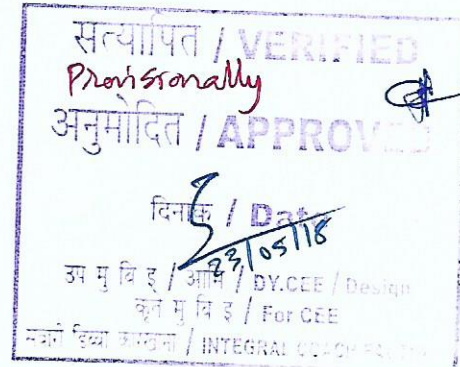
8.1 Make and Break Capacity Test:

Cam Switch shall be connected to a 2.5 Amps inductive load of time constant 40 ± 5 ms at 125 Volts. The Load shall be selected in such a way that a 2.5 Amps current shall flow. Under this condition, 100 make and 20 break operations at two minutes interval shall be carried out. There shall not be any appreciable erosion on contacts after the test.

8.2 Electrical Endurance Test:

Any one of Cam switch shall be subjected to 1,00,000 (One Lac) make and break operations at 1.0 Amps inductive load with time constant of 40 ± 5 ms at 125 volt DC. The Cam Switch shall be operated at the rate of 60 operations per minute. During the test cam profile similar to those of Master controller shall be used.

Revision History:



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