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Karandikar Laboratories



TYPE EXAMINATION REPORT

- 1)
- 2) **Electrical Apparatus for Explosive Atmospheres**
- 3) **TE Report Number: KLPL/Ex/19-016X** **Issued On: 27.01.2019**
- 4) **Electrical Apparatus:** **10 Channel Earth Monitoring System-Main Unit**
Model: Decalock_DL0317_Main Unit
- 5) **Name and Address of the Manufacturer:** **ESD CONTROL SYSTEMS**
Plot No.41, Venkateswara Enclave, Suchitra 'x' Roads,
Jeedimetla, Hyderabad-500055, Telangana.
- 6) This equipment and any acceptable variation thereto are specified in the schedule to this report and the documents therein referred to.
- 7) Karandikar Laboratories Pvt. Ltd. reports that this equipment has been found to comply with requirements of the following standards relating to the design and construction of electrical apparatus for explosive gas atmospheres.
- 8) This TE Report was issued as verification that a sample, representative of production, was assessed and tested and found to comply with the IS/IEC standards listed below:
IS/IEC 60079-0: 2011, IS/IEC 60079-11: 2006
- 9) The Examination and Test results are recorded in KLPL's confidential
Report No: KLPL/Ex/ESD-19/002; Dated: 27.01.2019
- 10) The sign X if placed after the report number; it indicates that the equipment is subject to special conditions of safe use specified in the schedule to this certificate.
- 11) This Report does not indicate compliance with electrical safety and performance requirements other than those expressly included in the above listed standards.
- 12) The marking of the Equipment shall include the following:
Ex d [ib Gb] IIB Gb T6 (-10 °C ≤ T_{amb} ≤ 50 °C)

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Atul Marathe
Atul Marathe (Technical Manager)

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Karandikar Laboratories Pvt. Ltd.

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Dated: 27.01.2019

SCHEDULE

13) Description of Product:

The 'Decalock-DL0317_Main Unit' herewith designated (EUT) Equipment under test, is part of the 'DECALOCK MODEL DL0317 ten channel earth monitoring system with interlock', which ensures truthful functioning of temporary earthing of mobile material handling equipment used in pharma and chemical industries.

The EUT consists of control & display unit. It is placed in hazardous area. It receives power supply from safe area unit 'Decalock-DL0317_Interface Unit'. The EUT circuitry is enclosed in FLP Ex-d enclosure with glass window for display. It provides 10 channels of intrinsically safe earth loop check links to the field earth loop check links.

The EUT scans its channels for different time interval as customer choose from 0.5, 1, 2 and 3 seconds and all other nine channels inhibited and thus avoid interference due to aggregation of loop check currents. In case of detection of fault, a control signal is sent to the safe area unit 'Decalock-DL0317_Interface Unit', which subsequently operates a relay in its circuit and switches off the respective equipment in the field.

❖ Display: 2 sets of 12mm x 8mm – 7 segment LEDs i.e. 1 set Green and the other set Red

The channel number being scanned for customer's desired time interval is displayed in the following mode:

- If the earth loop is healthy (less than 10Ω), then Number is displayed in Green
- If the earth loop is faulty (more than 10Ω), then Number is displayed in Red
- ❖ Registration: Faulty channels if detected, is registered in 1 to 10 – 5mm Red LED indication array along with sending signal to the safe area interface unit to shut down the respective equipment.
- ❖ All Stop: All Stop button freshly starts scanning, deleting all previous registrations and stalling all the equipment connected to it. Should only be used as an 'Emergency Stop'.
- ❖ Hold / Release: When pressed once the system scanning stops and particular channel number is displayed continuously, it helps in carrying out repair work to particular earth strips, etc. and when pressed again the instruments resumes scanning, and also resets the respective channel equipment to normal working, without interrupting other equipments.



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Dated: 27.01.2019

SCHEDULE

ESD CONTROL SYSTEMS, HYDRABAD
Apparatus: 10 Channel Earth Monitoring System main Unit
Model: 'Decalock_DL0317_Main Unit'; Serial No. ZZZZ Year. YYYY
Installation: HAZARDOUS AREA
Ex d [ib Gb] IIB Gb T6 (-10 °C ≤ Tamb ≤ +50 °C)
Entity Parameters
Input parameters: Ui = 10V , li = 330 mA rms, Pi = 3.3W, Li = 0 , Ci = 2 μF
Output Parameters: Uo = 0.66V , lo = 13mA, Po = 8.6mW, Lo = 1mH, Co = 1 μF
Warning Marking:
'DO NOT OPEN WHEN ENERGISED';
'To be used with 10 Channel Earth Monitoring System Interface Unit apparatus.'
Certified By- KARANDIKAR LABORATORIES PVT. LTD.
Z's denote product serial number. Y's denote year of manufacturing

- 14) **Model Designation:** 'Decalock-DL0317_Interface Unit' Model No.DL0317_MU
manufactured by ESD CONTROL SYSTEMS.
- 15) **Ingress Protection:** Enclosure: IP 66 as per IS/IEC 60529: 2001
- 16) **Ambient Temperature:** -10 °C ≤ Tamb ≤ +50 °C
- 17) **Temperature Class:** T6





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SCHEDULE

18) Documents submitted along with the Test Report:

Sr. No	Doc. Date	Doc. No.	Rev. No.	Doc. Title	No. of Pages
1	20.11.2017	ESDCS-317-0110-DOC-01	01	Decalock-Application & Working	2
2	20.11.2017	ESDCS-317-0110-DOC-02	01	Decalock-Technical Specifications	3
3	80.06.2018	ESDCS-317-0110-CD05	02	Schematic circuit diagram Processor and 10 channel Board PCB ESDCS DL0317-05	1
4	08.06.2018	ESDCS-317-0110-BOM05	02	DECALOCK BOM FOR PCB 05	6
5	01.11.2017	ESDCS-317-0110-CD06	01	Schematic circuit diagram-7 Segment Display 0-10 Red LED registrations Board PCB ESDCS DL0317-06	1
6	08.06.2018	ESDCS-317-0110-BOM06	02	DECALOCK BOM FOR PCB 06	2
7	01.11.2017	ESDCS-317-0110-CD07	01	Schematic circuit diagram-7 Segment LED Display Driver Board registrations Board PCB ESDCS DL0317-07	1
8	08.06.2018	ESDCS-317-0110-BOM07	02	DECALOCK BOM FOR PCB 07	2
9	01.11.2017	ESDCS-317-0110-CD08	01	Schematic circuit diagram-4 way connector Board PCB ESDCS DL0317-08	1
10	08.06.2018	ESDCS-317-0110-BOM08	02	DECALOCK BOM FOR PCB 08	1
11	01.11.2017	ESDCS-317-0110-CD09	01	Schematic circuit diagram-12 way connector Board PCB ESDCS DL0317-09	1
12	08.06.2018	ESDCS-317-0110-BOM09	02	DECALOCK BOM FOR PCB 09	1
13	20.11.2017	ESDCS-317-0110-DOC-13	01	DECALOCK- Details of conformal coating	3
14	12.02.2018	ESDCS-317-0110-BOM-EL6	02	Hazardous Area Unit Cable, Wire Harnessed Wire Bunches BOM with datasheets (Finolex, Finocab)	4+3+6
15	29.12.2012	CIMFR/TC/SR/H520	-	Test Report for FLP-WP Double Compression Cable Glands	9
16	14.02.2018	ESDCS-317-0110-EL06	01	Hazardous Area Unit Cable, Wire Harnessed Wire Bunches Chart	5
17	19.12.2012	CIMFR/TC/P/H617	-	Test Report for FLP-WP Control Station and Instrument Box	17
18	12.12.2018	ESDCS-317-0110-DOC-HA03	01	Marking Lable	1

END OF THE DOCUMENT

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