



working for a safer tomorrow

Karandikar Laboratories



F 08 CE Rev. 02

EX EQUIPMENT TYPE EXAMINATION REPORT

- 1)
- 2) TE Report Number: **KLPL/Ex/19-016X Issue no.01** Dated: **30.03.2023**
- 3) **Ex Equipment:** **10 Channel Earth Monitoring System Main Unit**
Model: 'Decalock-DL0317_Main Unit'
- 4) **Manufacturer:** **M/s ESD Control Systems**
Plot No. 41, Venkateswara Enclave,
Suchitra 'x' Roads, Jeedimetla,
Hyderabad-500055, Telangana.
- 5) This equipment and any acceptable variation thereto are specified in the schedule to this report and the documents therein referred to
- 6) 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 equipment for explosive gas/dust atmospheres as applicable.
- 7) This TE Report was issued as verification that a sample, was assessed, tested and found to comply with the IS / IEC standards listed below.
IS/IEC 60079-0: 2017 & IS/IEC 60079-11: 2011
- 8) The Examination and Test results are recorded in KLPL's confidential
Report No.: KLPL/Ex/ ESD-23/002 Dated: 30.03.2023
- 9) The sign X if placed after the TE report number; it indicates that the equipment is subject to specific conditions of use specified in the schedule to this TE Report.
- 10) This Report does not indicate compliance with electrical safety and performance requirements other than those expressly included in the above listed standards.
- 11) The marking of the Equipment shall include the following:

Ex Code:

Ex db [ib Gb] IIB T6 Gb (-10 °C ≤ Ta ≤ +50 °C)

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A. V. Karandikar
Ajit Karandikar
CEO

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Karandikar Laboratories Pvt. Ltd.

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SCHEDULE



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12) Details of Type Examination Reports Issued: -

TE Report No.	Issue No.	Report No.	Date	Reason for Issue
KLPL/Ex/19-016X	00	KLPL/Ex/ESD-19/002	27.01.2019	Original test report.
KLPL/Ex/19-016X	01	KLPL/Ex/ESD-23/002	30.03.2023	Revalidation: No design change, Evaluation as per new standard IS/IEC 60079-0: 2017 and IS/IEC 60079-11:2011

13) Description of equipment

The 'Decalock-DL0317_Main Unit' is used to ensure truthful functioning of temporary earthing of mobile material handling equipment used in pharmacy and chemical industries.

The equipment circuitry is enclosed in pre-certified FLP Ex-d enclosure with a glass window for display. It is energized by certified power supply unit 'Decalock-DL0317_Interface Unit' placed in safe area. The EUT provides 10 channels of intrinsically safe earth loop check links in the field.

The equipment scans its channels for different time intervals (0.5, 1, 1.5 seconds) that can be selected by the user. Only 1 channel is measured at a time, inhibiting the other 9 channels, thus avoiding the interferences due to aggregation of loop check currents.

In case of a detection of a fault, a control signal is sent to the 'Decalock-DL0317_Interface Unit', which subsequently operates a relay in its circuit to switch-off the power for respective equipment in the field.

The degree of ingress protection of IP 66 as per IS/IEC 60529:2001 achieved by enclosure.

14) Model Designation:

Model No.	Product	Rating
'Decalock-DL0317_Main Unit	10 Channel Earth Monitoring System Main Unit	Refer Point 17





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15) Drawings & Documents

Document No.	Sheet	Issue	Date	Document Title
ESDCS-317-0110-DOC-01	2	01	20.11.2017	Decalock application & Working
ESDCS-317-0110-DOC-02	3	01	20.11.2017	Decalock technical specifications
ESDCS-317-0110-CD05	1	02	08.06.2018	Schematic circuit diagram Processor and 10 channel Board PCB ESDCS DL0317-05
ESDCS-317-0110-BoM05	6	02	08.06.2018	DECALOCK BoM for PCB 05
ESDCS-317-0110-CD06	1	01	01.11.2017	Schematic circuit diagram 7 segment display 0-10 Red LED registration board PCB ESDCS DL0317-06
ESDCS-317-0110- BoM06	2	02	08.06.2018	DECALOCK BoM for PCB 06
ESDCS-317-0110-CD07	1	01	01.11.2017	Schematic circuit diagram 7 segment LED display DRIVER registration board PCB ESDCS DL0317-07
ESDCS-317-0110- BoM07	2	02	08.06.2018	DECALOCK BoM for PCB 07
ESDCS-317-0110-CD08	1	01	01.11.2017	Schematic circuit diagram 4 way connector board PCB ESDCS DL0317-08
ESDCS-317-0110- BoM08	1	02	08.06.2018	DECALOCK BoM for PCB 08
ESDCS-317-0110-CD09	1	01	01.11.2017	Schematic circuit diagram 12 way connector board PCB ESDCS DL0317-09
ESDCS-317-0110- BoM09	1	02	08.06.2018	DECALOCK BoM for PCB 09
ESDCS-317-0110-DOC13	3	01	20.11.2017	DECALOCK- Details of conformal coating
ESDCS-317-0110- BoM-EL6	4+3+6	02	12.02.2018	Hazardous Area Unit Cable, Wire Harnessed Wire Bunches BoM with datasheet (Finolex, Finecab)
ESDCS-317-0110- EL06	5	01	14.02.2018	Hazardous Area Unit Cable, Wire Harnessed Wire bunches Chart

Drawings listed above are finally accepted as accurately representing the product for which this evaluation report has been prepared. These drawings provide necessary information as required by the above referred standards.

16) Temperature Class:

Considering the ambient temperature range of -10°C to +50 °C, the requested temperature class of "T6" is acceptable.



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17) Electrical Rating:

Input Supply:

$U_i = 10 \text{ Vdc}$, $I_i = 330 \text{ mA}$, $P_i = 3.3 \text{ W}$, $L_i = 0 \text{ mH}$, $C_i = 2 \mu\text{F}$

Output Supply:

$U_o = 0.66 \text{ Vdc}$, $I_o = 13 \text{ mA}$, $P_o = 8.6 \text{ mW}$, $L_o = 1 \text{ mH}$, $C_o = 1 \mu\text{F}$

18) Specific conditions of use:

Equipment shall be used with 10 Channel Earth Monitoring System Interface Unit apparatus only.

Conditions of Manufacturer: -

The equipment shall be enclosed in an enclosure appropriately certified by PESO for EPL Gb.

19) Routine test:

- Dielectric strength test, in accordance with IS/IEC 60079-11 Clause 10.3, conducted on insulation between intrinsic safe circuit and the frame of the equipment at gradual application of test voltage at 500 Vrms for one minute. No evidence of flashover or breakdown shall be observed, the maximum current flowing do not exceed 5.0 mA.

END OF DOCUMENT



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