



working for a safer tomorrow

Karandikar Laboratories



F 08 CE Rev. 01

- 1) **EX EQUIPMENT TYPE EXAMINATION REPORT**
- 2) TE Report Number: **KLPL/Ex/10 -006X Issue no.01** Dated: **21-09-2022**
- 3) Ex Equipment: **Flameproof Pressure / Temperature Switch (ORION Brand - Model FC/ FA / FM)**
- 4) Manufacturer: **Kaustubha Udyog**
S. No. 36/1/1, Sinhgad Road, Vadgaon Khurd, Pune 411041
- 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 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 60079-1: 2014
- 8) The Examination and Test results are recorded in KLPL's confidential Report No.: **KLPL/Ex/KSU-21/001** Dated: **21-09-2022**
- 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 db I Mb

Ex db IIC T6 Gb (-20°C ≤ Ta ≤ +60°C)

Page 1 of 4




Ravi Paranjpe
Director (Operations)

This certificate may only be reproduced in its entirety, without any change, schedule included and is subject to Karandikar Laboratories general terms & conditions

Karandikar Laboratories Pvt. Ltd.

Laboratory : Gat No. 142, Boisar Chihar Road, Opp. Union Park, At Betegaon, Boisar (E) - 401501, Dist - Palghar Tel. : 02525-284 931/989

Head Office : B-101, Ansa Indl. Estate, Saki Vihar Road, Sakinaka, Andheri (E), Mumbai-400072. Tel. : 022-28471395 / 97 / 98 / 28470126

Email : sales@karandikarlab.com Website : www.karandikarlab.com

In association with



helping to make the world safer



working for a safer tomorrow

TE Report No.: KLPL/Ex/10-006X Issue No.01
Dated: 21-09-2022



SCHEDULE

F # 08 CE Rev. 01

12) Details of Type Examination Reports Issued: -

TE Report No.	Issue No.	Report No.	Date	Reason for Issue
KLPL/Ex/R/10-006X	00	KLPL/Ex/R/KU-10/001	29.12.2010	Re-validation for upgradation of standard IS/IEC 60079-0:2004 and IS/IEC 60079-1:2007 from ERTL report number ERTL (E)/TES/K085/0084/02-08, Dated: 25.02.2008
KLPL/Ex/10-006X	01	KLPL/Ex/KSU-21/001	21.09.2022	Addendum for change in address of manufacturer and re-validation for upgrade of standards to IS/IEC 60079-0:2017

13) Description of equipment

The Flameproof Pressure / Temperature Switch comprises of a cylindrical enclosure with a T shaped base and a circular threaded cover. The cover and body are made of grey cast iron. Alternate material can be SS. As per the requirements of the new standard the cover is locked by a SS grub screw. The cover and the body form a threaded flamepath with 17.2mm as depth of engagement and more than 6 fully engaged threads. The gross volume of the enclosure is 480cc and the net volume is 300cc max.

The micro switches are operated by a push rod by the pressure sensing capsule attached to the enclosure base on a vented column. The push rod enters the enclosure via a bushing that also provides an adjustment of the sensitivity by varying the pressure on a spring in the vented column. The various sensing capsules are separated from the vented column and the flameproof enclosure by a pressure tight membrane. The operating rod forms cylindrical flamepath of more than 25mm length and the maximum gap of 0.9mm meet the requirements of the standard.

IP 66 level of protection is achieved using Neoprene, silicon or viton 'O' rings between the body and the cover and on the operating rod.

The pressure switch enclosure cover has an SS 304 name cum warning label permanently fixed by a SS screw giving all relevant details like certification details, manufacturer's details along with the warning- "DO NOT OPEN WHEN ENERGIZED and DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT."

The equipment carries degree of protection IP66 and found to be comply with IS/IEC 60529:2001.





working for a safer tomorrow

TE Report No.: KLPL/Ex/10-006X Issue No.01

Dated: 21-09-2022



SCHEDULE

F # 08 CE Rev. 01

Cable entries

The enclosure has two 3/4" NPT threaded entry meant for cable connection. Other variations could be a 1/2" NPT / M20 X 1.5 cable entry as per the customer's requirement. This cable entry will always be mated with an appropriate Ex d certified cable gland.

Earthing

Both internal and external earth connections are provided on the sample. As both connections are into the metallic body the earth connections are considered adequate.

14) Model Designation:

Model No.	Product	Rating
FC/ FA / FM	Flameproof Pressure / Temperature Switch	15A , 240 Vac

15) Drawings & Documents

Earlier approved drawings and documents are withdrawn and are replaced by following drawings and documents:

Drawing Number	Sheet Nos.	Issue & Rev.	Date	Title
A24 KL 001	01 to 02	03	16.08.2022	Flameproof Pressure / Temperature Switches
CM/L- 7775906	01 to 05	---	21.09.2020	BIS Endorsement Letter
---	01	---	20.12.2021	Undertaking for no design changes

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 maximum ambient of +60°C, the requested temperature class of "T6" is acceptable.

17) Electrical Rating:

The enclosure is rated for an I_{max} of 15A and V_{max} of 240 Vac.





working for a safer tomorrow

TE Report No.: KLPL/Ex/10-006X Issue No.01

Dated: 21-09-2022



SCHEDULE

F # 08 CE Rev. 01

18) Specific conditions of use:

1. The manufacturer has maintained larger flamepath length ,more stringent gap and more number of threads than required by the standard. The user must refer to manufacturer before carrying out any repairs or refurbishment to the equipment.
2. For Group I only "Gray cast iron or stainless steel" enclosures can be used. Aluminium alloy LM6 can not be used in Group I applications.

19) Routine test:

The enclosure has been subjected to 4 times overpressure test and hence manufacturer need not subject each enclosure to routine pressure testing.

20) Additional details:

BIS LIMS QR Code: (Only for BIS report)	100000298310
Date of receipt of sample:	17.09.2022
Tests started on:	18.09.2022
Tests completed on:	20.09.2022

END OF DOCUMENT

