



WEBINAR ON EXPLOSION PROTECTION TECHNIQUES AND INTRINSIC SAFETY

12th MAY, 2020

ORGANIZED BY

ISA LDCE STUDENT SECTION

AFFILIATED WITH ISA GUJARAT SECTION

AND DEPARTMENT OF INSTRUMENTATION AND

CONTROL ENGINEERING,

L.D. COLLEGE OF ENGINEERING, AHMEDABAD

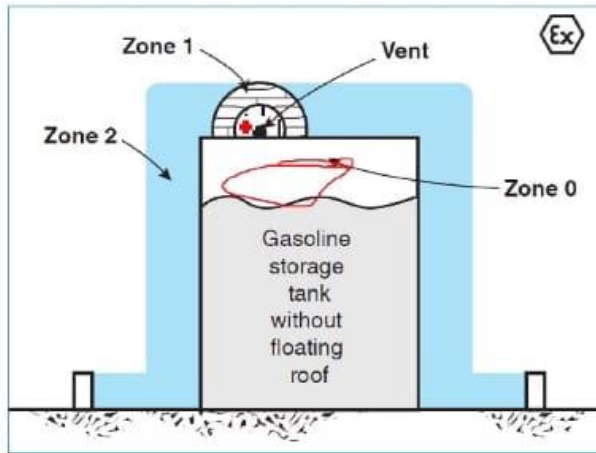
Ensuring the safety of people, achieving a safe and fault-free production process, and having a clean working environment are important aims. And the way to achieve these aims is to be aware of how explosions occur wherever combustible materials, oxygen, and sources of ignition can come together, and how to avoid them. So to spread the knowledge regarding this topic, ISA student section LDCE and instrumentation and control department, L.D. College of engineering organized a webinar on Explosion Protection techniques and intrinsic safety on 12th May, 2020.

Around 45 Students from 4th and 6th semester of IC dept. LDCE and various colleges had participated in this Webinar. Mr. Jagdish shukla (Vice-President of ISA District 14- Asia pacific), Mr. Sanjeev chaudhary (President of ISA Gujarat section), Mr. Vipul Patel (Treasurer of ISA Gujarat section) had joined this webinar. Along with the dignitaries from ISA Gujarat section, faculty advisor of ISA student section LDCE and head of the department Dr. Manish T. Thakker, Prof. V.P. Patel – Training and Placement officer, LDCE along with departmental faculties Prof. Harsh K. Shastri, Prof. Sampan N. Shah had also joined the webinar. The seminar was delivered by Dileep Mani who is presently the Deputy Manager of Process Automation at Pepperl + Fuchs and has a working experience of more than 13 years. He is an electronics and communication engineer and has a vast knowledge regarding industries. He is highly skilled in the field of Process automation, System Engineering and Process control.

The session started with the brief introduction on the topic. Further the topics covered were Explosion triangle, Explosion limit, Area segregation, Device selection, Standards and Certification, Types of Protection, Basics of Intrinsic safety, Zener barriers and Isolated Barriers. At the end of the webinar a Q&A session was kept so that the doubts regarding the topic get solved. The whole session lasted for around a 90 minutes.

Glimpses of Webinar

Explosive Area Classification – ATEX/IECEX



According to IEC/EN 60079-10

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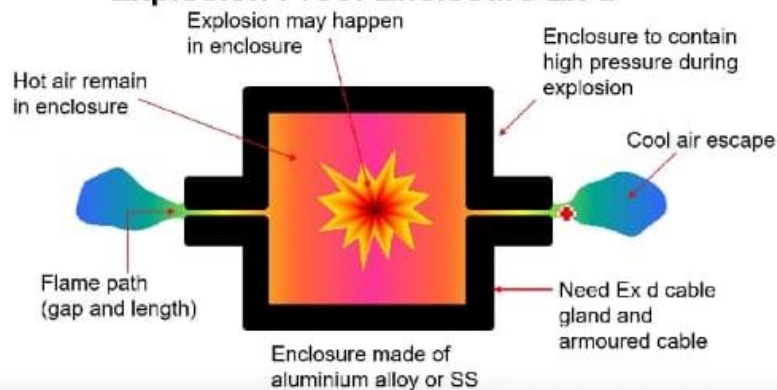
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Explosion Protection Techniques

Method: Containment
Standards: IEC/EN 60079-1
ATEX: EN 60079-1

Explosion Proof Enclosure Ex d



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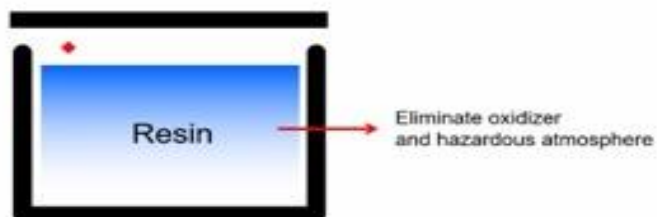
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Explosion Protection Techniques

Method: Segregation
Standards: IEC/EN 60079-18
ATEX: EN 60079-18

Encapsulation Protection Ex m



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Advantages of Using IS Protection

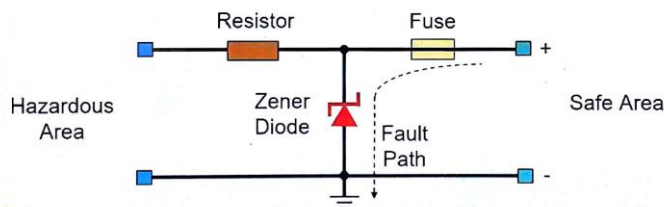
- ✓ Only protection suitable for Zone 0 (Category 1)
- ✓ Live maintenance is possible
- ✓ Safer due to low voltage and current
- ✓ Lighter enclosure
- ✓ Non certified switches, T/C, RTD, strain gauge, potentiometer can be used due to Simple Apparatus criteria.
- ✓ Armored cable and Ex certified junction box not needed

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How it Works?

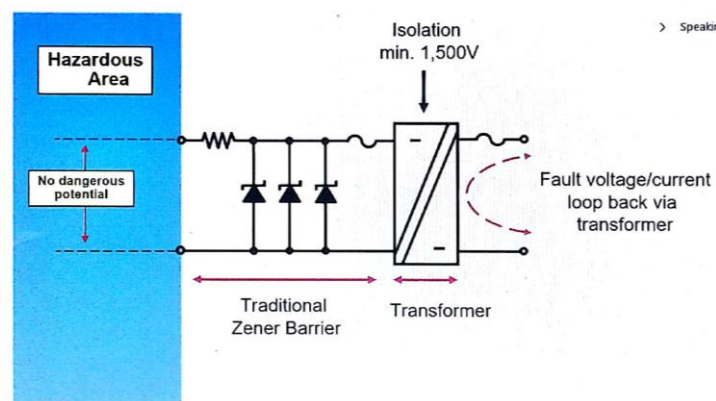
- Series resistor limits fault current
- Zener diode limits fault voltage
- Fuse limits energy and disconnection of loop
- Diversion of fault path



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Transformer Isolated Barrier



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