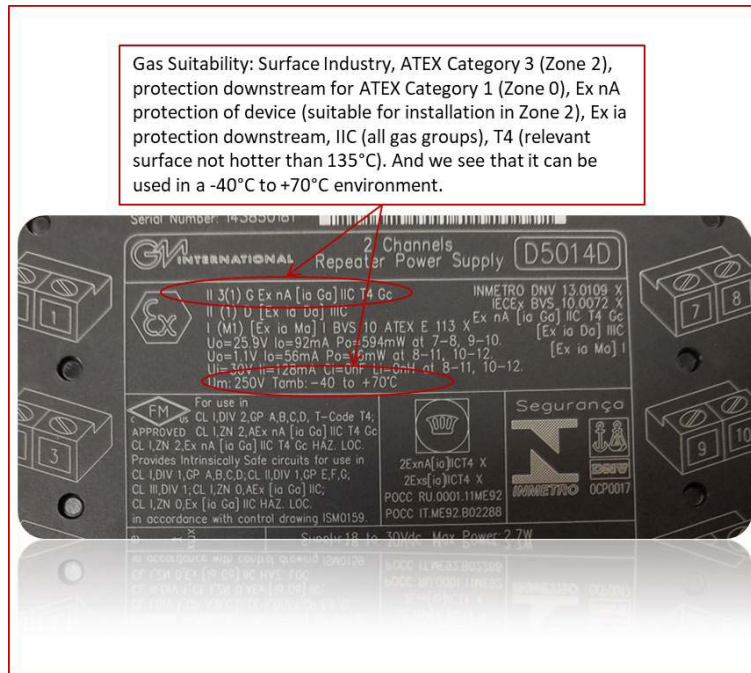


**Understanding Ex Markings  
Robert Johnson – President Source IEx**

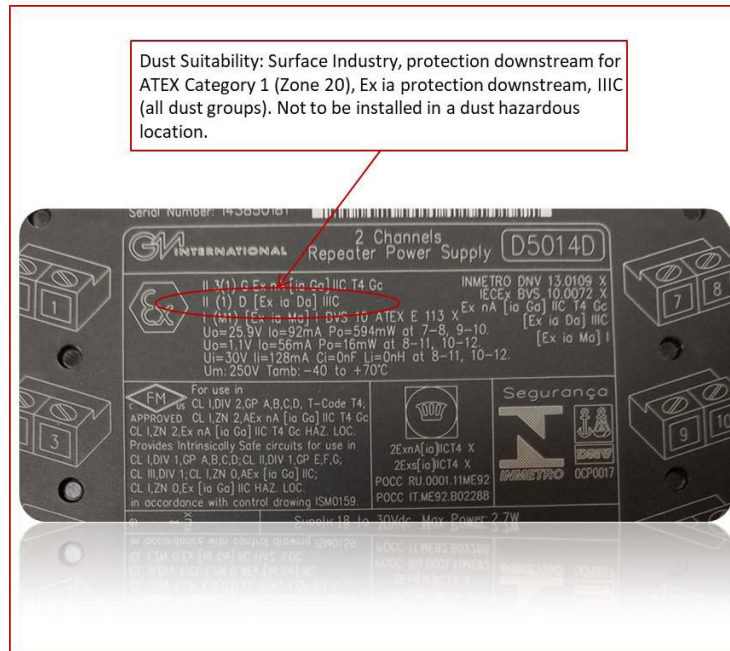
One of the questions that always comes up is to how to understand all of the markings on an Ex piece of equipment to fully understand the certification as well as suitability of the product for the application and market it is intended for. I picked out a GMI Safety I.S. barrier which is certified for many different markets and has approvals from various international test labs and have broken down the specifics to help learn how to correctly interpret an Ex label to make sure that the product in question is suitable for your application.

Let's start with the first line on this particular product:

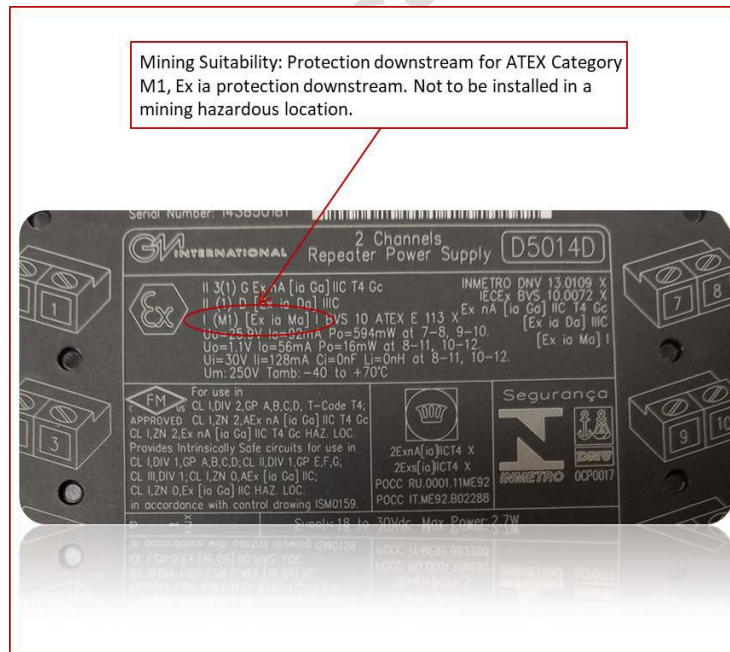


So we can see from the above line that the product using Ex nA as a protection concept can be installed into a Zone 2 environment. That doesn't mean we can use install it without any further assessment as we can tell from the 'X' at the end of the certificate that it has a condition for safe use. If we pull out the certificate, in this case, it will state something to the effect that the barrier must be installed inside of a suitable enclosure that meets the requirements of EN/IEC 60079-0 which in this case, would be an Ex nA enclosure at a minimum, assuming that the area in which we place the equipment doesn't have a gas with an ignition temperature less than 135°C. And we can also tell that since the product has a IIC gas group rating, we can apply this to all gas groups including IIA, IIB & IIC. We can also see that the product can provide protection downstream from the I.S. barrier to a piece of equipment that could be installed into a Zone 0 environment. We can tell this by the protection concept Ex ia and the additional markings within brackets. Also, it shows with the ambient range, it is suitable for a wider range than is standard for Ex equipment which is -20°C to +40°C.

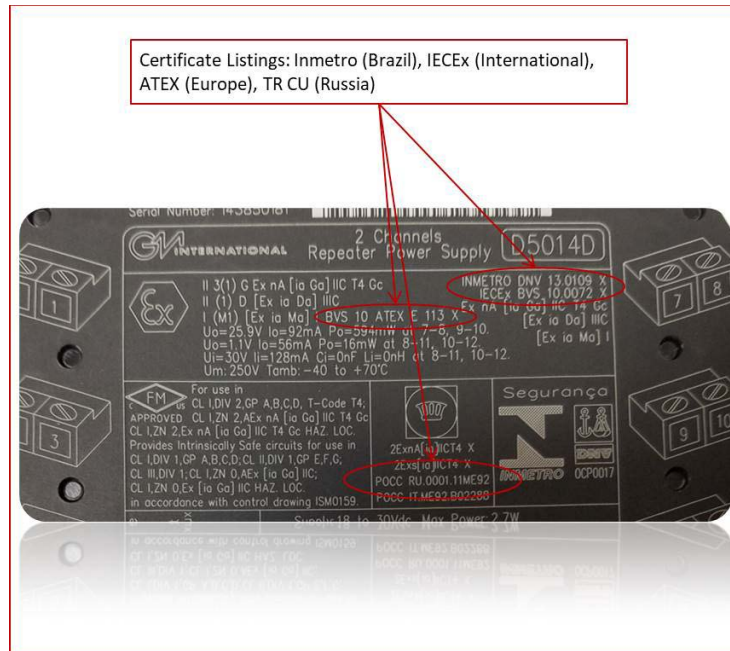
In reviewing the second line, we see the following details:



In this case, it can be used as an associated apparatus for providing protection downstream from the I.S. barrier into a Zone 20 dust location. However, unlike the gas application, this unit cannot be installed directly into a dust hazard location and must be located in a non-hazardous, ignitable dust free environment.

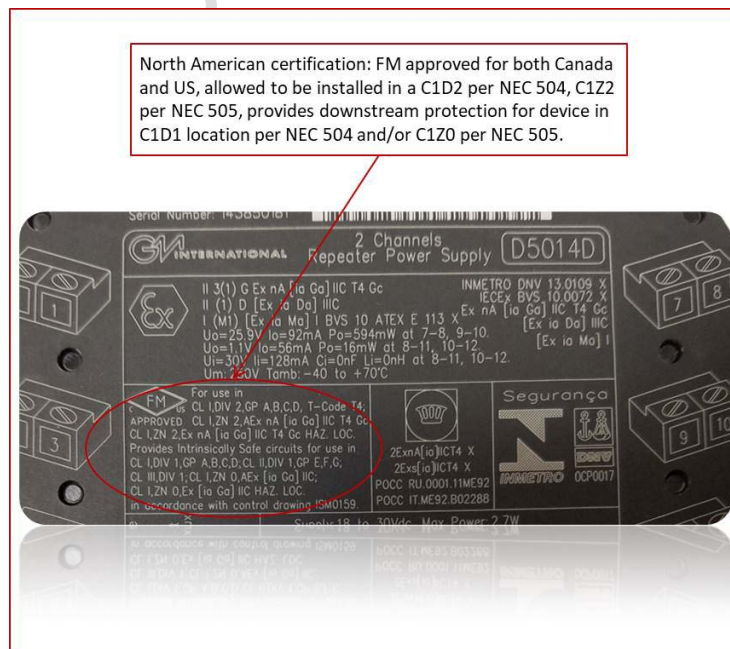


In the line above, we see that the product is also suitable for protection downstream for applications in which subsurface hazardous location approvals are required by the marking of roman numeral I, as well as the ATEX Ma marking, showing suitability for mining applications. Again, we find that the marking is of an associated apparatus and cannot be installed directly into a mining application without additional protection of some sort such as putting inside a suitable Ma rated enclosure. Generally speaking, this like in the dust hazard above ground application would be installed in a non-hazardous rated area in a general purpose enclosure.



In looking at the markings above, we see that the product has various certificates depending on the market in which it is being used in. These are key documents to review before any installation is carried out as they all will have specific details of conditions for safe use that must be followed before installation and application. As noted before, one of the conditions would be if installed in a hazardous area, it must be installed in an appropriately certified enclosure. You will also find specific details beyond the listing of the product to include electrical parameters such as voltage, current, inductance and capacitance allowed for the specific product and system to allow the safe use of the product into a hazardous area.

Finally, on the label below, we find the approvals for use in both Canada and the US for both Class Division and Class Zone hazardous locations. Per the markings below, we can see that the product can be installed in both a Class 1 Division 2 and Zone 2 hazardous location as similar to the International markings noted above, can provide protection to a piece of equipment located in an area of greater hazard such as Division 1 or Zone 0 & 1 hazardous locations.



So to summarize here, the particular piece of equipment is certified for many different markets around the world by different third party labs, can be installed in Division 2/Zone 2 hazardous locations, can provide protection downstream of the area in which it is installed in an area of greater hazard such as Division 1 and/or Zone 0. Hopefully, this exercise has provided a little bit of clarification to help you understand Ex marking for a specific real world application.

*Source IEx is a leading supplier of Ex products and services including in-house customized training programs as well as CompEx in addition to inspection services for compliance to many different international and North American hazloc standards.*

*Please feel free to contact us anytime for more information on this topic or other topics related to hazloc equipment/installations.*

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