



Insulation

DDB Unlimited

8445 Highway 77 North
Wynnewood, OK 73098

800-753-8459

405-665-2876

www.ddbunlimited.org

INSULATION

No matter how much insulation is installed in the enclosure the temperature of the inside of the enclosure will come close to the temperature outside the enclosure unless there is heat or cooling generated inside the enclosure. The insulation provides a delay of the ambient temperature getting into or out of the enclosure and does not prevent the temperature incursion. Generally the R factor is basically the number of hours of the delay where R3 would be 3 hours and R12 would be 12 hours. This delay is extremely critical to provide time for the cooling or heating of the inside of the enclosure so that the temperature extremes do not exist that can damage equipment.

Some of our customers provide a low temperature cutoff switch that prevents equipment from being powered under low temperature conditions. The initial commissioning of these sites is to simply apply power to the site and wait for the heaters to bring the inside temperature up to the required temperature. Those sites that do not have low temperature cutoff generally require providing an external heat source to bring the temperature within operating conditions. The obvious advantage to the low temperature cutoff switch is that it does not require personnel to be present if the event occurs at other than commissioning.

The use of commercial/industrial rated equipment in harsh environments requires the above and extended range rated equipment are exempt from the above since they can operate over the full temperature range.

The potential of the enclosure soaking to the ambient temperature is something that the system designer must consider in the basic design. Those areas that may constantly get to extremely low temperatures should be considered very carefully.