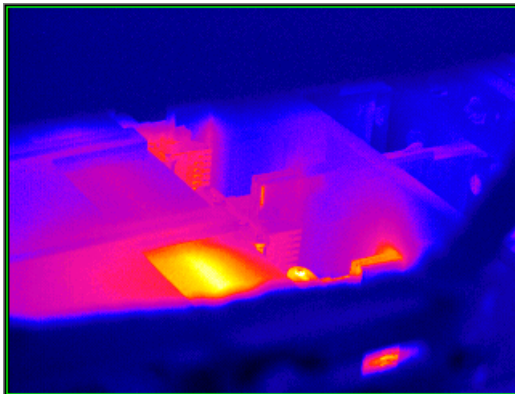


It is the temperature inside that counts

When judging the immediacy of the need to make a repair, we normally look at the temperature rise of the hot spot over that of a similar, normal location on the same piece of equipment. A device with a 25°F temperature rise would usually be assigned a Priority of 2, meaning that it should be repaired as scheduling permits. However, one must always consider where the heat is coming from. Consider the case below.



The infrared image on the left shows the top of a draw-out breaker. The front of the breaker is to the left. The rear, where it is connected to the bus, is to the right. Because of the cabinet around it we had to look through the side from the adjacent cabinet to see the breaker. The hot spot is only 25°F hotter than the same spot on the phase next to it. By its temperature alone it would warrant a Priority 2. However, one has to ask where the heat is coming from. There are two possibilities, both bad. One would be from the finger connections on the back to the bus. The other would

be from the contacts in the breaker itself. In this case there is no way to get a better view of the bus connection. We looked from the back but there was a cover over the bus that could not be safely removed.

Hindsight is 100% and we know now, after the failure of the breaker, that the hot spot was probably in the contacts. One clue to this in the picture is that the part of the bus connection we can see is not any hotter than the plastic top of the case. If the heat were conducting from the bus connection to the inside of the case, one would expect the connection to be considerably hotter. How hot were the contacts? We don't know. However they had to be quite hot for the radiation from them to cause a 25° rise on the plastic cover that was not touching the contacts.

The lesson from this event is that, if you see heat on a case that coming from inside the case, assume that the connection is considerable hotter than what you see and raise your repair priority by a rating or two.