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Title: 19XR5 Diffuser Position Fault

Category:

Termination Date:

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Models CAC: 19XR5 With Frame 5 Compressors

Affected:

PURPOSE:

This bulletin is to emphasize the importance of the diffuser position control and safety and to advise of related software changes.

BACKGROUND:

The 19XR5 compressor has a split ring diffuser (SRD) that is coordinated with inlet guide vane position to provide efficient and reliable operation. If, for any reason, the IGVs and SRD aren't coordinated, there is a chance for rotating stall which could lead to impeller tip breakage or bearing failure (see Bulletin C9922). To minimize the chance for such a failure the PIC controls have a transducer that senses pressure fluctuations at the tip of the impeller. If the control determines that there is rotating stall, it shuts the chiller down and displays Code 247, "PROTECTIVE LIMIT", "DIFFUSER POSITION FAULT". Do not restart the chiller until the cause of the alarm is determined. It is critical that a 19XR5 never be operated with the SRD control disabled (SETUP2, DIFFUSER CONTROL OPTION).

SITUATION:

It was intended that the stall safety would always be enabled even if the SRD were accidentally disabled. It has been determined recently that the safety is turned off if the DIFFUSER CONTROL OPTION is turned off.

ACTION:

PIC II, Ver 4 software for 19XR5 went into production in June (Bulletin C0008). It has been modified so that the stall safety is always enabled.

- PIC II 19XR5 chillers not yet started should be upgraded to Ver 4.
- 19XR5 chillers already started do not need to be upgraded to Ver 4.
- Customers and service personnel involved with 19XR5 chillers should be advised to leave the DIFFUSER CONTROL OPTION enabled.

FILE: Controls & Wiring