

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MINNESOTA

HVAC MODULATION TECHNOLOGIES,  
LLC,

Plaintiff,

vs.

TRANE US, INC.,

Defendant.

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Civil Action No. \_\_\_\_\_

JURY TRIAL DEMANDED

**COMPLAINT**

Plaintiff HVAC Modulation Technologies, LLC (“HVAC Modulation”) brings this action against Defendant Trane US, Inc. (“Trane”) and for its cause of action alleges:

**THE PARTIES**

1. HVAC Modulation is a corporation organized and existing under the laws of the State of Texas, with its principal place of business in Frisco, Texas.

2. Trane, on information and belief, is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at Piscataway, New Jersey. Trane may be served through its registered agent, CT Corporation System Inc., 1209 Orange Street, Wilmington, Delaware 19801.

**BACKGROUND FACTS**

3. On January 7, 1997, United States Patent No. 5,590,642 (“the ‘642 patent”) entitled “Control Methods and Apparatus for Gas-Fired Combustors” was duly and legally issued to Gas Research Institute (“GRI”). A true and correct copy of the ‘642 patent is attached as Exhibit A. The ‘642 patent relates, generally speaking, to a control system capable of

modulating the fuel flow, the circulation of the heat transfer medium, and the combustion air for a fluid-fuel burner, such as in a furnace for an HVAC system.

4. A request for ex parte reexamination of the '642 patent was filed on February 18, 2009. On March 30, 2010, a reexamination certificate was issued for the reexamined '642 patent. A true and correct copy of the reexamination certificate for U.S. Patent No. 5,590,642 C1, which includes the amended '642 claims, is attached as part of Exhibit A.

5. Pursuant to 35 U.S.C. § 282, the '642 patent is presumed valid.

6. Varidigm Corporation ("Varidigm") was established in 1999 to commercialize certain technology developed by GRI (now Gas Technology Institute), including the technology the subject of the '642 patent. Following the issuance of the '642 patent to GRI and subsequent assignment to Varidigm in 2003, Varidigm successfully developed and marketed control boards for furnaces that include the patented features disclosed by the '642 patent. More specifically, in 2006 York International Corp. (now a division of Johnson Controls Inc.) negotiated for, and obtained from Varidigm, the exclusive right to purchase from Varidigm products incorporating the subject patented technology for use in the residential HVAC market. Varidigm's control boards allowed York to introduce its modulating furnace line. Since that time, Varidigm and York have experienced considerable commercial success in that market and the patented technology is considered one of the primary reasons for such success.

7. Effective as of July 1, 2012 York's exclusive rights in the residential field terminated. Nevertheless, Johnson Controls, Inc. (York's parent) agreed to continue to purchase exclusively from Varidigm products incorporating the subject technology through June 2014.

8. The termination of York's exclusive rights to the patented technology was concomitant to Plaintiff's eventual acquisition of the '642 patent. Thus, in September 2012, by

way of assignment, Plaintiff became the owner of all right, title and interest in and to the ‘642 patent, with all rights to enforce the ‘642 patent against infringers and to collect damages for all relevant times, including the right to prosecute this action. Varidigm is licensed under the ‘642 patent solely as is necessary to fulfill its obligations to sell product to York / Johnson Controls. York / Johnson Controls, in turn, is licensed solely in order to purchase Varidigm products which incorporate the ‘642 patented technology. No other entity has any right or authority to the ‘642 patent.

### **JURISDICTION AND VENUE**

9. Plaintiff incorporates by referenced paragraphs 3 – 8.

10. This action arises under the patent laws of the United States, Title 35 of the United States Code, particularly §§ 271 and 281. This Court has jurisdiction over the claim for patent infringement under 28 U.S.C. § 1338(a).

11. Varidigm is, and has at all relevant times been, based in Plymouth, Minnesota. Consequently, relevant witnesses are in Minnesota and relevant documents are currently located at Varidigm’s Plymouth offices and various facts and circumstances relevant to the suit occurred in Minnesota.

12. Trane, upon information and belief, transacts business in this district by making, using, selling or offering to sell methods and systems as described and claimed in the ‘642 patent and/or conducting other business in this judicial district sufficient to render it subject to jurisdiction in this district.

13. For the foregoing reasons, personal jurisdiction exists and venue is proper in this Court under 28 U.S.C. §§ 1391(b) and (c) and 1400(b).

### **CLAIM FOR PATENT INFRINGEMENT**

14. Upon information and belief, Trane manufactures, makes, has made, markets, sells and/or uses products that infringe one or more claims in the '642 patent.

15. On information and belief, Trane has directly infringed at least claim 1 of the '642 patent and continues to infringe the '642 patent by its manufacture, use, sale, importation and/or offer for sale of its furnaces that include a control system capable of modulating the fuel flow, the circulation of the heat transfer medium and the combustion air as described in the '642 patent. Such furnaces include, but are not limited to, all Trane models having the referenced functionality, such as the TUHMB furnace models as well as such products made, used or sold by Trane under other names, such as American Standard and Ingersoll-Rand.

16. The infringement of the '642 patent alleged above has injured HVAC Modulation and thus, it is entitled to recover damages adequate to compensate for Defendant's infringement, which in no event can be less than a reasonable royalty.

### **DEMAND FOR JURY TRIAL**

HVAC Modulation demands a jury trial on all claims and issues so triable.

### **PRAYER FOR RELIEF**

WHEREFORE, HVAC Modulation prays for entry of judgment:

A. That Defendant, Trane, has directly infringed, either literally and/or under the doctrine of equivalents, one or more claims of the '642 patent;

B. That Defendant, Trane, account for and pay to HVAC Modulation all damages caused by the infringement of the '642 patent, which by statute can be no less than a reasonable royalty;

- C. That HVAC Modulation be granted pre-judgment and post-judgment interest on the damages caused to it by Defendant's infringement of the '642 patent;
- D. That HVAC Modulation be granted its attorneys' fees in this action;
- E. That costs be awarded to HVAC Modulation;
- F. That HVAC Modulation be granted such other and further relief that is just and proper under the circumstances.

Dated: October 3, 2012

Respectfully submitted,

/s/ Craig J. Lervick

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