CG APPLICATIONS

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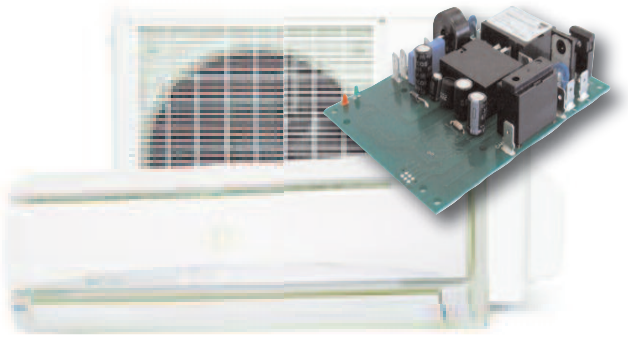

Application Note :	**July 26th 2007**
Market involved :	**HVAC**
Product :	**RSBS 1-Phase Softstarter**
Customer :	**Swedish Heat Pump OEM**
Subject :	**Starting of 1-Phase Heatpumps**

CUSTOMER ISSUE :

Changes in the environment are attracting global attention and leading to growing consumer awareness on energy efficiency within the immediate surroundings.

The customer produces compressor driven heat pumps for houses and larger buildings. These systems can convert heat from bedrock, soil, water, outdoor air, exhaust air or industrial processes and reduce energy costs by at least 1/3rd.

Energy companies are however imposing higher tariffs based on maximum current demand.
It is therefore necessary to limit typically high compressor starting currents, especially within a residential context.

OUR SOLUTION:

The RSBS is a softstarter that reduces compressor starting currents and hence limits peak energy demand.

To guarantee this level of control, a current limiting function is activated during starting. The RSBS has been specifically designed for 1-phase compressors and also employs a matching capacitor to boost starting torque.

The device further monitors line voltage and automatically disengages when sensing a drop of more than 15%.

The ramp up time is preset to less than 1s as required for a typical scroll compressors.

ACHIEVED BENEFITS:

- Starting currents are maintained within the limits established by Energy companies.
- The end user can reduce energy cost by avoiding high peak rates.
- It may also be possible to apply for a lower rated and hence cheaper tariff service.
- The system avoids damage by voltage dips to other equipment within the residential area.
- Nuisance light flicker is avoided.
- It may be possible to reduce the dimensions of supply cables and switchgear.
- Avoids unnecessary tripping of protection devices.