



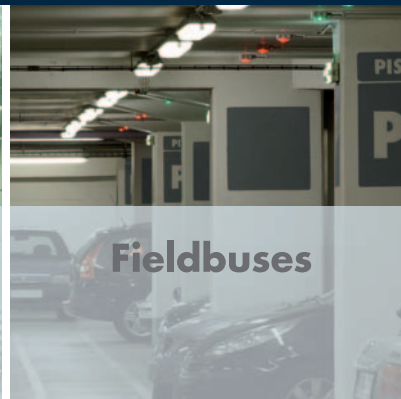
Sensors



Switches



Controls



Fieldbuses

Application notes



Application Note : July 2016

Market involved : HVAC

Product : RSGD 75mm

Customer : OEM

Subject : Reduce starting current on piston compressors

CUSTOMER ISSUE :

Climatic chambers are widely used in industry for accelerated testing and/or simulation of specific climatic conditions.

One of the main components of these machines is the compressor, which is typically of the piston type.

The compressor has to perform frequent starts and stops to maintain specific temperatures inside the chamber test area.

With every start there is a high inrush current as well as mechanical stresses on the pipes and joints.

Therefore our customers' needs are:-

- Reduction of starting current
- Reduction of mechanical stresses on pipes
- Compact solutions due to the limited space in the panel

OUR SOLUTION :

The RSGD..VX31.C is designed in a 75mm wide housing for current ratings of 55A (30kW) up to 100A (55kW).

The self-learning algorithm is optimised for both current limitation and mechanical stress reduction, through a dual current ramp approach.

We can guarantee up to 10 starts per hour for all the ratings up to 100A thanks to the optimised thermal design.

A number of integrated protection functions, such as phase sequence monitoring, result in a more complete motor protection solution in only one device, thus saving space in the panel.

The RSGD is designed to operate at temperatures from -20°C to +60°C (>40°C derating applies).

BENEFITS :

- Self-learning algorithm optimises compressor starts by reducing starting current by approximately 40% vs direct on line starts
- Current ramp algorithm reduces mechanical stress on compressor and pipes
- Compact dimensions result in easier replacement of mechanical contactors
- Integrated protection functions safeguard the compressor during abnormal conditions
- Wide operational temperature range ensures reliable operation under extreme conditions