

## Utilization of Soft-Starter VFD in Reciprocating Compressor Applications

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### Abstract

Polyethylene production requires high power multiple pole machines for ethylene gas compression.

In most cases the machines are started DOL implying in high starting currents, additional mechanical stresses, influence on other loads, limitation of the number of consecutive starts and reduction of equipment's lifetime.

This paper introduces and compares the conventional DOL start with soft-starting alternatives, including the variable frequency drive.

Advantages and disadvantages of using a drive are investigated. The importance of the design coordination between compressor, motor and drive are addressed. Key points to specify the soft-starter, aspects to consider and installation pre-conditions are summarized. The possibility to start multiple machines, e.g. booster and hyper compressors, is outlined and evaluated. Concluding the work, application case studies results with recommendations are presented and discussed.

### *About the Authors*

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