

## TPS Surge Protection

The critical element to any turbo gas compressor, with respect to performance and efficiency at design, may be defined as the "ideal operating region of stability" often referred to as the compressor's operating map. This map finds the area that maintains a given stable (continual) impeller(s) flow with respect to a relative resistance or "HEAD". Additionally and further "finds the "edge" or curve to instability, often referred to as the surge curve. While over accelerating the compressor gas for a given load obligation may more favorably "place" the point of operation further from any instability the same will also result in a significant impact to energy.

From both energy and performance the point most desirable is located along the surge curve on a modest boundary to the stable operating region. Such operation affords the only the necessary energy input for continually stable compressor flow throughout all load conditions. With such strategy, a device that can approach, find and navigate from any point of instability becomes an enormous asset to compressor designers from a position of control.

Our TPS Surge Protection does just this. Rather than assume or master a map than can host applications as broad as the industry itself only to find field conditions are other than design, the TPS logic seeks real life instant conditions through an onboard Pulse Wave Sensitivity Device (PWSD) strategic located in the compressors downstream flow region. Now regardless of assumed condition and or anticipated region, we are afforded the privilege to safe conservative energy performance with immediate correction to the most modest conditions of instability.

Once the PWSD device recognizes any (preset) sensitivity to stall or surge, analog outputs introduce the compressor into a commensurate recycle flow providing absolute correction while minded to energy and load.

All TPS Surge Protection HMI programs contain settable points to afford the flexibility to any compressor stall and surge correction application you may have.

