



## Renowned control solutions to the Oil & Gas, Chemical and Petrochemical industries world wide

Control-Care's Performance Control Application (PCA) allows performance control of multistage compressors by maintaining the compressor's preferred control parameter through advanced PID techniques. The PCA is used in combination with Control-Care's Antisurge Control Application (ACA) to enable process override, decoupling and feedforward algorithms to allow full and reliable control of a single or multistage compressor. These algorithms typically ensure full integration of a the performance control application with an antisurge control application.

The entire Control-Care compressor control scheme can include antisurge (ACA) and performance (PCA) control, load-balancing optimization (SCA), compressor auxiliaries sequencing, parametric diagnostics and ESD system interfacing.

### Performance Control Application (PCA) is used

- to control the individual compressor train's performance, also known as stand-alone performance control
- in combination with the load-balancing control application (SCA) allowing load-balancing control with other compressors in parallel or series

### Hardware platform independent

- The core PCA functionality is identical on each applied control system platform
- The PCA is configured according to project specific requirements (e.g. I/O assignment), no programming

### Compressor performance controlled by

- compressor speed setpoint
- inlet guide vane (IGV) setpoint
- inlet (suction) or outlet (discharge) valve position setpoint

### Process control variable maintained is

- the compressor suction or discharge pressure
- the upstream or downstream process pressure
- the suction or discharge flow

### Manual control

- Operator can manipulate the application's output directly
- With or without limiting control loop active (configurable)

### Limiting control

- Application reverts to alternative process limit control when at
  - > high motor current or high driver power
  - > compressor choke control
  - > pressure or temperature limit

### Feedforward mode

- Stabilizing effect due to coordinated outputs from and to antisurge control application
- Process override control using compressor recycle valve in case of large disturbances

### Compressor performance control modes

- **STANDBY:** output at predefined standby value
- **START-UP:** ramps output up to start-up position
- **RUN:** PID output to final controlling element
- **FALLBACK:** reverts to an alternative control status due to input failure
- **SHUTDOWN:** ramps output to standby value

### Coordinated start-up sequencing

- between compressor sequence, Performance Control Application (PCA), Antisurge Control Application (ACA) and Station Control Application (SCA)

