



Overview

The PSC™ software module is engineered specifically for controlling press and shear applications. The program is embedded within the controller of a UNICO drive, eliminating the need for an external control rack. When used in conjunction with a programmable controller, the drive forms a powerful automation work cell that can either stand alone or be easily integrated with other UNICO automation cells to build a complete control system. Embedded control reduces system complexity while taking full advantage of the exceptional performance, flexibility, and ease of use of UNICO drives.

Features **Programmable Speeds**

The program provides four preset request speeds for use during automatic operation. The requested velocity is passed to the drive routine, which rate-limits the command velocity using the acceleration and deceleration time setups. The request velocity can also be supplied via a serial interface or an analog input.

Programmable Press Position Outputs

Eight programmable real-time outputs indicate discrete press positions, eliminating the need for mechanical cams. The outputs offer advance and retard delays based upon press speed. The press must be referenced to provide cam outputs.

Transducer/Transducerless Design

The control can operate with or without a feedback transducer. Typically, an incremental encoder is used for position and velocity feedback, although multiturn absolute encoders and single-turn resolvers are also supported.

Spinning Load

A spinning load feature allows the drive to pick up where it left off whenever it is shut off with the motor still spinning. When the motor is turned back on, the drive will accelerate to synchronize with the spinning load.

Regeneration Limiting

A regeneration limiting feature prevents overpowering of the dynamic braking resistors by limiting the power output during deceleration.

Regeneration Disable

A regenerative current disable feature allows the user to remove all regenerative or reverse currents when the drive is at speed.



Optional Features

Automatic Air Counterbalance

Adaptive current control lets the drive adapt its current limit to the energy needed during a press cycle. This reduces the magnitude of the current variations that result from an unbalanced press and varying load. The software provides a torque-equalizing method that can be used to determine when the torque between the up and down strokes is imbalanced. This can also minimize power consumption by providing an adjustment to counterbalance pressure.

Lube and Air Pressure Faults

The software can monitor critical air and lube flows, setting a warning to the operator or interrupting operation if a fault is detected.

Communications

A variety of communication protocols are supported for interfacing with a programmable controller or other device. The specific protocols available depend upon the drive used. Refer to the appropriate 1100 or 2000 series drive brochure for details.

Programmability

The control can be customized to a specific installation using *UEdit™*, a powerful Windows-based programming tool that lets users add their own ladder logic and function-block programming.

Inputs/Outputs

A variety of input/output functions are provided for integrating the press/shear control with external devices. The user can select the functions required by a given system and specify their corresponding hardware or serial I/O points.

Inputs

- motor on
- fault reset
- jog forward
- jog reverse
- fast stop
- motion enable
- auto
- reference
- manual
- acceleration 1
- clutch engaged
- press up
- press down
- DC field on
- motor thermal
- motor blower
- velocity select 0
- velocity select 1
- velocity select 2
- velocity select 3

Outputs

- motor on
- no fault
- no warning
- manual
- auto
- motion
- forward motion
- reverse motion
- at zero velocity
- at request velocity
- at maximum velocity
- reference
- cam 1
- cam 2
- cam 3
- cam 4
- cam 5
- cam 6
- cam 7
- cam 8
- motor rms warning
- inverter thermal warning

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