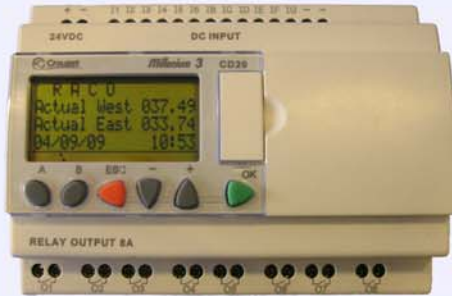


RACO Position Sync Controller



**-Actuator Position
Sync Controller**

**-Input Signals
4 - 20mA, 0 -10V
Potentiometer**

**-Output Signals
Potential Free Contact
120V AC, 24V DC**

**-Manual / Auto Control
via Push Buttons**

-Four Row LCD Display

-Flexible Design

RACO UNIVERSAL POSITION CONTROLLER FOR SYNCHRONIZED MOVEMENTS

Application

To synchronically position the stroke length of multiple RACO actuators, a universal and highly flexible position sync controller has been developed. The key of this position sync controller is to insure that both actuators are advancing or retracting in a predefined tolerance window under any circumstances. In conjunction with the RACO actuator analog and digital position feed back devices, and the customers setpoint signal, an accurate and efficient synchronized loop controlled system can be implemented. The controller output signals can be directly used to interface with the reversing motor starters or multiple variable frequency drives. Plausibility checks, position supervision, analog input range checking and/or default output conditions can be realized.

Functional Description

The customer's potential free, loop powered 4-20mA setpoint signal will be connected to the input port of the position controller and compared to the scalable 4-20mA or 0-10V actual position signals derived out of RACO's absolute actuator position encoder. RACO offers a voltage feed back signal generated out of a potentiometer, a 4-20mA loop feed back device (DMU2), or the new digital non-contact position encoder (EPS06). The embedded application program (see Fig. 1) will generate binary demand signals to extend and/or retract the actuators. Closed loop position supervision guaranties that even in a failure situation, the leading actuator will be stopped to allow the lagging actuator to

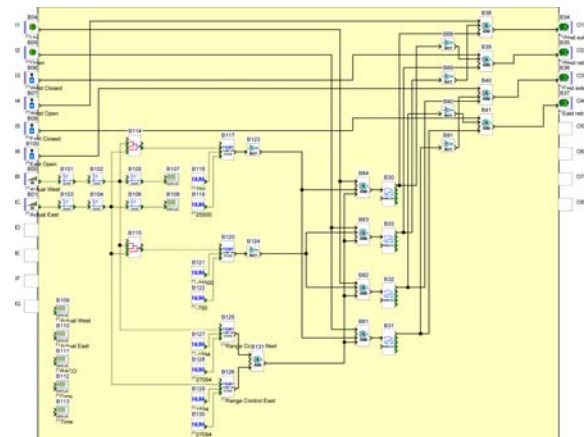
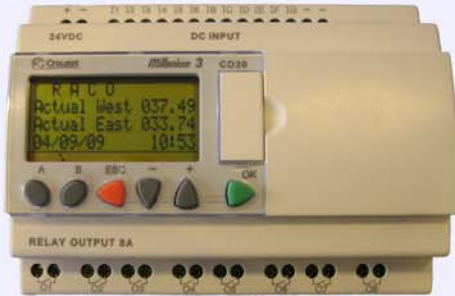


Fig. 1 Embedded Application Program

catch up. The position controller output signals are provided in the form of dry contacts. These signals will control the reversing starters or variable frequency drives. For redundancy purposes, the end of stroke limit signals derived from the RACO mechanical limit switches or the digital absolute position encoders can be wired into the position controller as binary permissive input signals and processed in the embedded application program.

The position controller is equipped with a four line display and function keys. Under normal operating conditions the current setpoint signal will be displayed as a percentage value (0 to 100%), as well as the actual positions and the resulting deviations.

RACO Position Sync Controller



Option Automatic / Manual Control

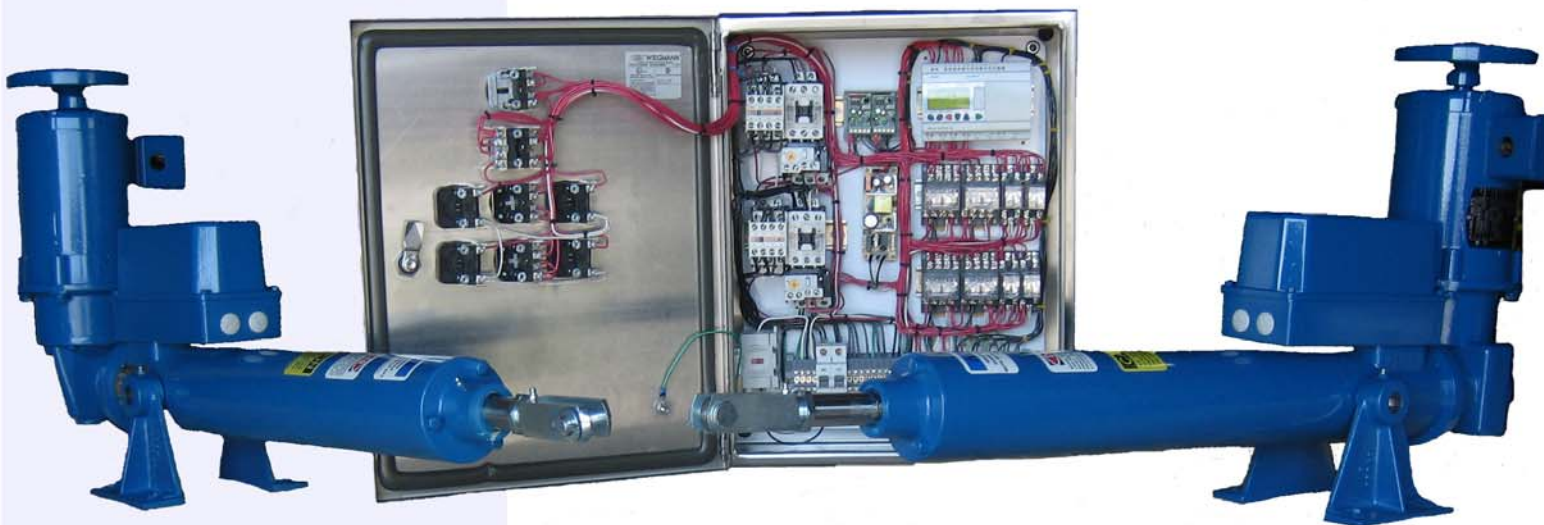
By pressing the “Manual” function key the automatic position control function will be halted and the display will show the available keys and their operational meaning. By pressing the “extend” or “retract” function key the position controller will send an open or close demand signal to the reversing motor starter or frequency drive. The synchronization functionality is still active in this mode. During manual operation, the actual position will be transmitted to the customer’s control system and the end of stroke limit switches will override the manual extend and retract function keys if end positions are reached.

The position controller can be switched into maintenance mode, whereby each individual actuator can be operated manually. Only the end of stroke limit switch supervision is active to prevent each actuator from over-stroking.

There are four additional unused binary/analog input signals and four additional unused output signals available in a two actuator setup which could signal position has been reached or actuator has been placed into manual mode.

Technical Data

Supply Voltage	24V DC, 6W max.
Input Channels	24V DC, 0-10V DC, 4-20mA
Output Contact	8A /250V AC
Operating Temp.	-20°C to 55°C, -4°F to 158°F
Enclosure	IP 20



RACO Position Sync Controller



Coal unloading facility

Functional Control Diagram

