

CB PCS-140E PUMP CONTROL SYSTEM

The Cleaver-Brooks PCS-140E Pump Control System utilizes a pressure transmitter and a programmable controller to control pump sequencing and pump alarms for up to 4 pumps.

System includes user-selectable manual or automatic control.

System does not include contactors or soft starters and will not operate VSD's.

FEATURES AND BENEFITS

Standard Features

- Programmable controller with display
- Set points, alarm points, transmitter span, and PI controls configurable using controller keypad
- Manual or automatic control of pumps
- Trending, modbus RTU communications and data logging to an optional micro SD card

PRODUCT OFFERING

The following are included as standard in each PCS-140E control system:

- Programmable controller
- Controller display with keypad
- I/O module
- Pressure transmitter
- Alarm horn and silence button
- Illuminated Pump Hand-Off-Auto Selectors switches, 1 per pump

ENGINEERING DATA

- Supply voltage 120 VAC
- Max load 3 amps
- Ambient temperature range 32 - 122 deg F
- Humidity, non condensing 5-95%
- Degree of protection
 - Display/keypad: IP65, Type 3R, Type 12R
 - Panel Nema 4/12
 - Lights and switches IP66
 - Pressure transmitter Nema 4

Sample Specifications

CB PCS-140E Pump Control System

1.1 GENERAL

General

- A. Each PCS-140E system shall be factory equipped with controller including display and I/O, NEMA 12 cabinet, and pressure transmitter.
- B. System shall provide the following functions:
 - 1. Adjustable transmitter span
 - 2. Adjustable pump lead lag set point
 - 3. Adjustable pump lead lag sequence
 - 4. Adjustable pump rotation method
 - 5. Low water pump cutoff input
 - 6. Adjustable P and I (proportional and integral gain) parameters
 - 7. Manual or automatic pump control
 - 8. On-screen alarm indication and relay output for alarms
 - 9. Alarm Silence input

2.1 PRODUCTS

Standard System

- A. Hardware Platform
 - 1. Controller with backlit graphic display
 - 2. Power Supply 115VA/24VDC 30 Watts
 - 3. I/O Module
 - (12) 24VDC inputs
 - (12) 24VDC outputs
 - (1) 4-20 mA output for pressure retransmit
 - (1) 4-20 mA input for pressure transmitter
- B. Pressure transmitter
 - 1. Pressure transmitter 4-20 mA
- D. Alarms
 - 1. Panel mounted alarm horn
 - 2. Alarm silence switch
 - 3. LED alarm light for pump failure and High or Low pressure

Functionality

- Individual delays for low pressure add a pump and high pressure shed a pump
- Select from 2 different pump operation modes
- In 'First On-First Off' mode when a pump is called to shut off, the lead pump is re-assigned to the last position in the sequence and the other pumps move up. The former lead pump (now lag 3) is turned off.
- In 'Timed Rotation' mode when a pump is called to shut off, the running pump with the lowest position on the sequence is shut off (Last On-First Off). When the run time of the lead pump exceeds the rotation time set point, the lag1 pump is started. When the lag1 pump is confirmed to be running, the lead pump is re-assigned to the last position in the sequence, shuts off, and the other pumps move up.

Trending, modbus RTU communications and data logging to an optional micro SD card