



# Microcomputer Duplex / Triplex / Quadplex Sequencer

# CUB-0004

## Operation

Initial application of supply power will cause the LEDs to flash for 2 seconds, but no loads will be energized. When #1 input switch closes, the appropriate output contact will be energized after a 5 second delay. As additional input switches close, additional output contacts will close, each with a 5 second delay. The CUB-0004 cycles outputs On and Off relative to the number of input switches that are closed based on a FOFO (First On – First Off) operation.

If multiple input switches are closed on power up, there will be a 5 second delay before the first output contact is closed. There will also be a 5 second delay before each additional output contact closes (staggered starting).

The CUB-0004 has the feature that if one output has been On continuously for more than 2 hours and another output contact is available; the CUB-0004 will switch the output closure to the one that has been Off the longest.

If all 4 input contacts and output contacts to loads are not going to be used, simply turn off the appropriate DIP switch (4, 3, 2 or 1). In addition to selecting the number of inputs and outputs for specific applications, a DIP switch may also be turned off for maintenance purposed too avoid turning On that particular output contact. The DIP switches are associated with the output contacts, not with the input switches.

The Alarm output contact will close if any one of the input switches closes out of sequence, indicating a faulty input switch. The fault will automatically clear when the out of sequence situation is corrected.

With 2 of the DIP switches turned Off, the CUB-0004 will operate in true duplex mode with the added feature of the 2 hour continuous run timer sequence.



- 4, 3 and 2 Compressor Sequencing
- FOFO (First On / First Off)
- 2 Hour Sequence
- Input De-Bounce Delay
- Staggered Starting
- Manual Output Select
- Alarm Output
- Indicating LEDs
- 10 Amp, 1NO
- Pick-up Delays

## Specifications

### Electrical

#### Line Voltage:

24V AC/DC, ±10%

115 or 230VAC, ±10%, 1Ø, 50/60Hz

**Inputs:** Normally Open (NO) contact or Solid State (NPN)

**Power Up Delay:** 5 Sec., Fixed

**Input Delays:** 5 Sec., Fixed

#### Output Ratings:

10 Amps Total Unit Rating

5 Amps @ 240VAC, per contact

10 Amps @ 120VAC, per contact

100,000 Full Load Electrical Cycles

10,000,000 Mechanical Cycles

**Output Delays:** 5 Sec., Fixed

Staggered start of multiple outputs

### Physical

**Mounting:** Surface

**Termination:**

Screw Terminals Removable (Plug-In)

**Packaging:** Dust Cover

**Weight:** 2 Lbs. Approx.

### Ambient Temperatures

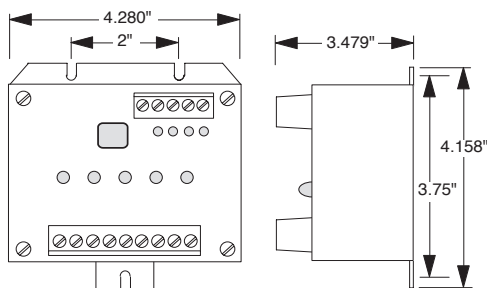
**Operating:** 0°C to 40°C

**Storage:** -30°C to 85°C



E71902  
Standard 508

## Dimensions



## Ordering Information

**CUB - 230A - 0004**

**R-K Model**

### Input Voltages

24V - 24VAC/DC

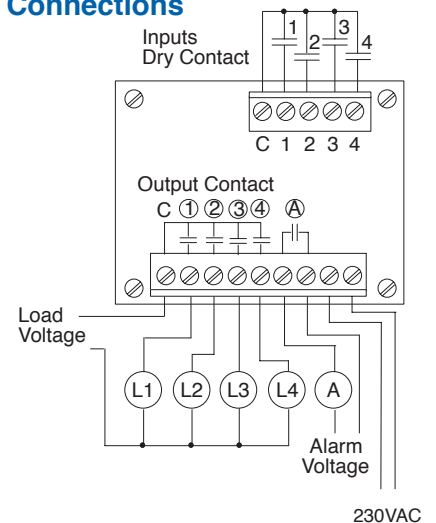
115A - 115VAC

230A - 208 to 230VAC

### Options

0004 - Special

## Connections



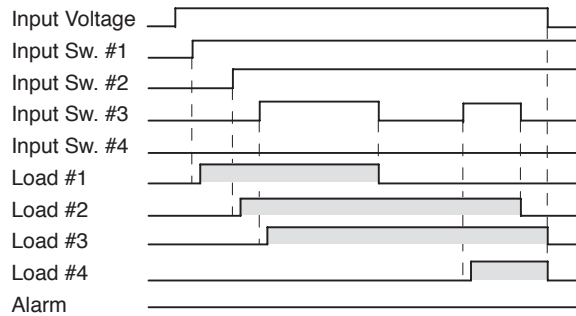
# CUB-0004

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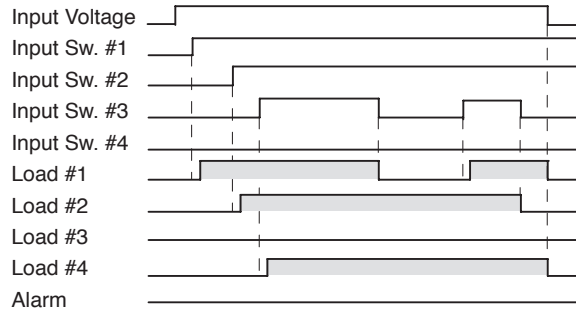
### Normal Operation

For normal operation where four loads (pumps or compressors) are available, but only three Input Switches are closed at any one time. When Input Switch #1 closes, Load #1 energizes 5 seconds later. When Input Switch #2 closes, Load #2 energizes 5 seconds later. When Input Switch #3 closes, Load #3 energizes 5 seconds later. When Input Switch #3 is opened, the FOFO operation is observed. Since Load #1 was the first one on, then it is the first one off. When Input Switch #3 re-closes, Load #4 is the next one in sequence to energize. FOFO operation insures that all active outputs are operated in sequence and distributes the running time between Loads.



### #3 Relay Select Disabled Operation

Where Load #3 (pump or compressor) has been taken out of service, but four Input Switches are still active. When Input Switch #1 closes, Load #1 energizes 5 seconds later. When Input Switch #2 closes, Load #2 energizes 5 seconds later. When Input Switch #3 closes, Load #4 energizes 5 seconds later since Load #3 has been disabled. When Input Switch #3 is opened, the FOFO operation is observed. Since Load #1 was the first one on, then it is the first one off. When Input Switch #3 re-closes, Load #1 now is the next one in sequence to energize. FOFO operation insures that all active Outputs are operated in sequence and distributes the running time between Loads.



### Engineering Specification Paragraph

Logic controller must be able to operate as a 2, 3 or 4 pump (compressor) sequencer using a First On First Off (FOFO) operation, relative to the number of starters being used. Any combination or quantity of outputs may be disabled, maintaining the FOFO operation. Time delays of 5 seconds are required to de-bounce each input signal, in addition to a 5 second staggered start if more than one output is called into service at one time.

