

Incremental Encoder Emulator

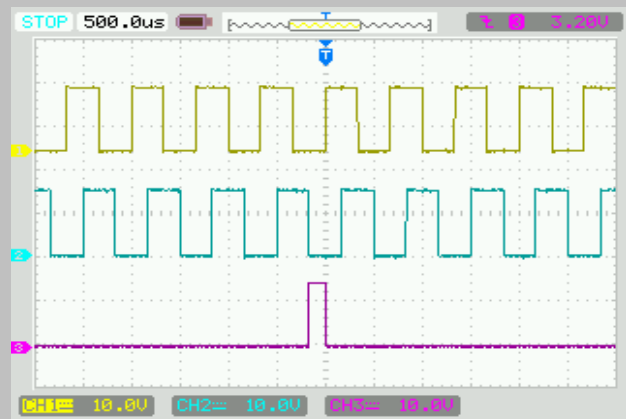
Model JI-820



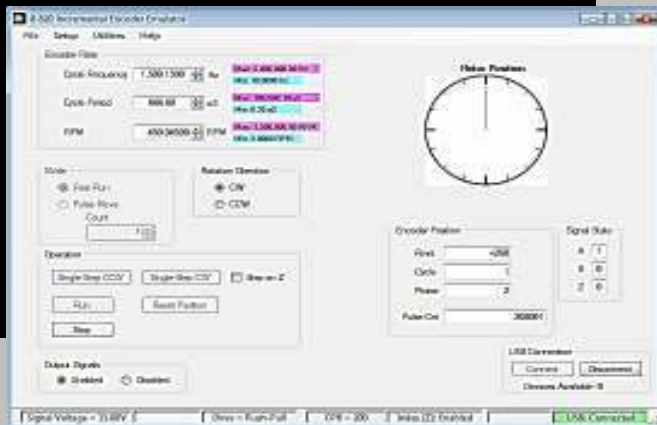
- Emulate/Simulate Rotary and Linear Incremental Encoders
- Programmable Pulse-Per-Rev: 4 to 4,000,000
- Adjustable Cycle Frequency: 0.1 Hz to 5.0 MHz (50 nS steps)
- Variable A/B Phase: 10° to 170° in 1° steps (90° nominal)
- Index (Z) Signal: Selectable Polarity (+/- pulse) and Position (+/- 1 cycle)
- Variable Signal Amplitude: Internal 5.0 to 18.0 Volts (100 mV steps), External 5.0 to 30.0 Volts
- Output Interface: RS-422, Open-Drain, Push-Pull, or Push-Pull Complementary

The JI-820 is a flexible, easy-to-use, PC controlled instrument designed to precisely emulate the function of a wide variety of incremental encoders. It provides the design, system, or test engineer with a tool to accurately emulate encoder signals generated by motion control and industrial monitoring systems. Variable encoder parameters include cycles per revolution, cycle frequency, A/B signal phase, Z signal position and polarity, signal amplitude, and selectable signal interface. An intuitive Windows application manages instrument setup and control.

Communications and unit power is provided via a USB 2.0 connection.



Typical Output Signals (A, B, Z)



Operational Control Panel



Signal Setup Menu

Jupiter Instruments

Unique Instrumentation Products

Ph: 949-716-0154 | www.jupiteri.com

Mission Viejo, CA 92692

Specification subject to change without notice

Doc# 82009032019

Incremental Encoder Emulator

Model JI-820

Jupiter Instruments

Ver 1.2

Electrical Specifications

1/21/2018 Edition

| General | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|--|------------------|------------|------------|------------|----|----------|---------|-------|----|----------|---------|--------|----|---------|---------|--------|---|---------|---------|--------|---|----------|---------|---------|
| Signals | A, /A, B, /B, Z, /Z | | | | | | | | | | | | | | | | | | | | | | | | |
| Cycles per Revolution (CPR) | Programmable: 1 to 1,00,000 | | | | | | | | | | | | | | | | | | | | | | | | |
| Pulses per Revolution (PPR) | Programmable: 4 to 4,00,000 | | | | | | | | | | | | | | | | | | | | | | | | |
| Signal Phase Resolution | Selectable: 1, 5, 10, 45, or 90 degrees | | | | | | | | | | | | | | | | | | | | | | | | |
| Frequency Range, Cycle | <table border="1"> <thead> <tr> <th>Phase Resolution</th> <th>Freq. Max.</th> <th>Freq. Min.</th> <th>Resolution</th> </tr> </thead> <tbody> <tr> <td>90</td> <td>5.00 MHz</td> <td>10.0 Hz</td> <td>50 nS</td> </tr> <tr> <td>45</td> <td>2.50 MHz</td> <td>5.00 Hz</td> <td>100 nS</td> </tr> <tr> <td>10</td> <td>555 KHz</td> <td>1.11 Hz</td> <td>450 nS</td> </tr> <tr> <td>5</td> <td>277 KHz</td> <td>0.55 Hz</td> <td>900 nS</td> </tr> <tr> <td>1</td> <td>55.5 KHz</td> <td>0.11 Hz</td> <td>4500 nS</td> </tr> </tbody> </table> | Phase Resolution | Freq. Max. | Freq. Min. | Resolution | 90 | 5.00 MHz | 10.0 Hz | 50 nS | 45 | 2.50 MHz | 5.00 Hz | 100 nS | 10 | 555 KHz | 1.11 Hz | 450 nS | 5 | 277 KHz | 0.55 Hz | 900 nS | 1 | 55.5 KHz | 0.11 Hz | 4500 nS |
| Phase Resolution | Freq. Max. | Freq. Min. | Resolution | | | | | | | | | | | | | | | | | | | | | | |
| 90 | 5.00 MHz | 10.0 Hz | 50 nS | | | | | | | | | | | | | | | | | | | | | | |
| 45 | 2.50 MHz | 5.00 Hz | 100 nS | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 555 KHz | 1.11 Hz | 450 nS | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 277 KHz | 0.55 Hz | 900 nS | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 55.5 KHz | 0.11 Hz | 4500 nS | | | | | | | | | | | | | | | | | | | | | | |
| Position Tracking: | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revolutions | -2 ³¹ to 2 ³¹ | | | | | | | | | | | | | | | | | | | | | | | | |
| Cycle | -2 ³¹ to 2 ³¹ | | | | | | | | | | | | | | | | | | | | | | | | |
| Phase | 1 to 4 | | | | | | | | | | | | | | | | | | | | | | | | |
| Operational Modes | Free Run, Single-Step, Pulse Move | | | | | | | | | | | | | | | | | | | | | | | | |
| Index Signal (Z) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Position | Programmable: +/- 1 cycle span (max) | | | | | | | | | | | | | | | | | | | | | | | | |
| Polarity | Selectable: Positive or Negative Pulse | | | | | | | | | | | | | | | | | | | | | | | | |
| Output | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type | Selectable: RS-422 Open-Drain Push-Pull Push-Pull Complementary | | | | | | | | | | | | | | | | | | | | | | | | |
| Voltage Source | Internal or External | | | | | | | | | | | | | | | | | | | | | | | | |
| Internal | | | | | | | | | | | | | | | | | | | | | | | | | |
| Voltage | Adjustable 5.0V to 18.0V (100mV increments) | | | | | | | | | | | | | | | | | | | | | | | | |
| Current | Sink: 100 mA (max per signal) Source: 30 mA max per signal (90 mA combined) | | | | | | | | | | | | | | | | | | | | | | | | |
| External | | | | | | | | | | | | | | | | | | | | | | | | | |
| Voltage | 5.0V to 30.0V | | | | | | | | | | | | | | | | | | | | | | | | |
| Current | Sink/Source: 100 mA (max per signal) | | | | | | | | | | | | | | | | | | | | | | | | |
| Short-Circuit Protection | Internal and External | | | | | | | | | | | | | | | | | | | | | | | | |
| Output Control | Enable/Disable Output | | | | | | | | | | | | | | | | | | | | | | | | |

Electrical Specifications (continued)

| | |
|---------------------|---|
| Connector: | |
| Type | Standard 9-Pin, D-sub, Female |
| Pin-outs | Pin 1 = External Voltage (Input) Pin 2 = Z Pin 3 = A Pin 4 = B Pin 5 = GND Pin 6 = GND Pin 7 = /Z Pin 8 = /A Pin 9 = /B |
| LEDs | |
| Power | Power-On |
| Activity | Output Signal Activity |
| PC Interface | |
| Communication | USB 2.0 Full Speed |
| Connector | Standard type B socket |
| Power | USB supplied Current Draw: 270mA (Nominal) 690mA (Maximum @ max. signal load) |

Mechanical and Environmental Specifications

| | |
|----------------------|-----------------------------|
| Mechanical | |
| Dimension | 3.3" x 1.1" x 5.0" (WxHxL) |
| Weight | 0.2lbs |
| Construction | Extruded Aluminum Enclosure |
| Environmental | |
| Operating Temp | 0C to 45C |
| Storage Temp | -20C to 70C |
| | |