

## Red Lion Deluxe Counters, Timers & Rate Meters

- Bi-Directional Counting to 20 kHz
- 8 Counting & Timing Modes
- Programmable Scaling
- Eight Digit, 0.46" (12 mm) LCD
- Green/Red LED Backlight Changes at Setpoint
- NEMA 4X/IP65 Front
- Setpoint Relay Output Option
- RS232 or RS485 Communications



**CUB5**



### SPECIFICATIONS

Counter A:	8 digit display, -9999999 to 99999999
Counter B:	7 digit display (positive only)
Count Rate:	20 kHz max. at 50% duty cycle, except Dual = 16 kHz, Quadrature = 14 kHz, Quadrature x4 = 13 kHz
Rate Meter:	6 digit display, with <b>R</b> designator on left
Frequency:	20k Hz max., 0.01Hz min., Accuracy 0.01%
Count/Rate Input A:	Source, Sink, Logic, Mag pickup; DIP switch selectable
Current Sinking:	Internal 7.8 k $\Omega$ pull-up to + supply
Current Sourcing:	Internal 3.9 k $\Omega$ pull-down, 7 mA max. @ 28 VDC.
Logic Input:	V <sub>L</sub> = 1.25 V max.; V <sub>H</sub> = 2.75 V min.; V <sub>MAX</sub> = 28 VDC
Magnetic Pick-up:	Sensitivity 200 mV peak, 100 mV hysteresis, Maximum input $\pm$ 40 V peak, 30 Vrms
Count/Rate Input B:	Logic signals only
Trigger levels:	V <sub>L</sub> = 1.0 V max; V <sub>H</sub> = 2.4 V min; V <sub>MAX</sub> = 28 VDC
Current sinking:	Internal 10 k $\Omega$ pull-up resistor to + supply
Filter (LO Freq.):	Damping capacitor for switch contact bounce. Limits input to 50 Hz max. & pulse widths to 10 msec min.
Timer:	7 digit display, with <b>t</b> designator on left
Resolution:	Selectable 0.001 sec to 1 hr, Accuracy 0.01%
Cycle Counter:	6 digit display, with <b>C</b> designator on left
Rate:	10 Hz max. except Input B is 500 Hz with filter off
Timer/Cycle Inputs:	Logic Inputs, Current Sinking (active low)
Pulse Width:	1 ms min.
Software Filter:	50 msec start/stop debounce delay when enabled
User Input:	Programmable function input Logic Input, Current Sinking (active low)
Display:	Reflective LCD with full viewing angle or selectable transmissive red/green backlight LED (display color changes at preset when using relay module)
Power (not isolated):	9-28 VDC @ 30 mA max. from Class 2 supply
LED Backlight:	Adds 95 mA to supply current
Temperature:	-35 to 75 °C operating @ min. backlight (35 °C max. at max. backlight), <85% RH (non-condensing)
Connections:	Wire clamping screw terminals
Dimensions:	1.54" H x 2.95" W x 1.75" D (40x75x45mm)

### ORDERING INFORMATION

CUB5R000	CUB5 Dual Counter & Rate Indicator with Reflective Display
CUB5B000	CUB5 Dual Counter & Rate Indicator with Backlight Display
CUB5TR00	CUB5 Preset Timer and Cycle Counter with Reflective Display
CUB5TB00	CUB5 Preset Timer and Cycle Counter with Backlight Display
<b>Plug-in Options:*</b>	
CUB5RLY0	One Form C Setpoint Relay Card (0.3 A @125VAC, 1 A @ 28VDC, resistive)
CUB5COM1	RS485 Serial Communications Card (non-isolated)
CUB5COM2	RS232 Serial Communications Card (non-isolated)
CUB5USB0	USB Programming Card
<b>Accessories:</b>	
MLPS1000	+12 VDC, 400 mA Micro-Line Power Supply, 85-250 VAC
MLPS2000	+24 VDC, 200 mA Micro-Line Power Supply, 85-250 VAC
CBLPROG0	RS232 Cable (RJ11-DB9)
CBPRO007	RS485 Cable (RJ11-DB9)
CBLUSB00	USB Programming Cable
ENC8B000	NEMA 4X Plastic Enclosure 4.8" H x 4.7" W x 3.77" D

- Count, Dual Counter, Rate & Slave Display
- 0.56" Sunlight Readable 6 Digit Red Display
- Variable Display Intensity
- 4 Setpoint Relay Outputs
- Modbus Communication
- Analog Retransmit (PAXI)
- 10 point linearization (PAXI)
- 1/8 DIN, NEMA 4X/IP65 Front



**PAX**



### SPECIFICATIONS

Input Range:	34 kHz max. (13 kHz max for dual counter) 0.01 Hz min. on Rate Meter
Input:	30V DC max. DIP switch selectable for pulses from a variety of sources including NPN-OC, TTL outputs, and most Red Lion® sensors.
Logic Trigger Levels:	V <sub>L</sub> = 1.5 V max.; V <sub>H</sub> = 3.75 V min.
Current Sinking:	Internal 7.8 k $\Omega$ pull-up to +12 VDC, 1.9 mA max.
Current Sourcing:	Internal 3.9 k $\Omega$ pull-down, 7 mA max. @ 28 VDC.
Magnetic Pick-up (PAXR & PAXI models):	
Sensitivity:	200 mV peak, 100 mV hysteresis
Input Impedance:	3.9k $\Omega$ @ 60 Hz
Maximum Input:	$\pm$ 40 V peak, 30 Vrms
Rate Meter:	$\pm$ 0.01% accuracy, 5 digit display
Control Inputs:	Three, jumper selectable sink/source, max. input 30 VDC continuous, not isolated to sensor input
AC Power:	85 to 250 VAC 50/60 Hz, 18 VA.
LV Power:	11 to 36 VDC, 14 W; 24 VAC, 50/60 Hz, 15 VA
Input Isolation:	2300 Vrms to AC power, 500 Vrms to LV power
Sensor Power:	12 VDC $\pm$ 10%, 100 mA max., short circuit protected
Temperature:	0 to 50 °C operating, <85% RH (non-condensing)
Connections:	Cage-clamp terminal block
Dimensions:	1.95" H x 3.80" W x 4.1" D (50x97x105mm)

### ORDERING INFORMATION

PAXC0000	PAX Counter, Red Display, AC Supply
PAXC0100	PAX Counter, Green Display, AC Supply
PAXC0010	PAX Counter, Red Display, LV Supply
PAXC0110	PAX Counter, Green Display, LV Supply
PAXR0000	PAX Rate Meter, Red Display, AC Supply
PAXR0100	PAX Rate Meter, Green Display, AC Supply
PAXR0010	PAX Rate Meter, Red Display, LV Supply
PAXR0110	PAX Rate Meter, Green Display, LV Supply
PAXI0000	PAX Count/Rate/Slave, Red Display, AC Supply
PAXI0100	PAX Count/Rate/Slave, Green Display, AC Supply
PAXI0010	PAX Count/Rate/Slave, Red Display, LV Supply
PAXI0110	PAX Count/Rate/Slave, Green Display, LV Supply
PAXLCRU0	Dual Counter & Rate Meter with Dual Relay Outputs
<b>Plug-In Options for all models: *</b>	
PAXCDS10	Dual Form C Setpoint Relays (5 A @ 240 VAC or 28 VDC res.)
PAXCDS20	4 Form A Setpoint Relays (3 A @ 250 VAC or 30 VDC res.)
PAXCDS30	4 Setpoint Sinking Open Collector Outputs (0.1 A @ 50 V)
PAXCDS40	4 Setpoint Sourcing Open Collector Outputs (0.1 A @ 30 V)
<b>Plug-In Options for PAXI only: *</b>	
PAXCDL10	Analog Output Card (0-20/4-20 mA, 0-10 VDC)
PAXCDC10	RS485 Serial Communications Card with Terminal Block
PAXCDC1C	Extended RS485 Card with Dual RJ11 Connector
PAXCDC20	RS232 Serial Communications Card with Terminal Block
PAXCDC2C	Extended RS232 Card with 9 Pin D Connector
PAXCDC40	RS485 Modbus Communications Card
PAXCDC4C	Extended Modbus Card with Dual RJ11 Connector
PAXUSB00	USB Programming Card (not UL)
<b>Accessories:</b>	
ENC5B000	NEMA 4X Plastic Enclosure 7.4" H x 7.4" W x 5.11" D

\*add -ASSY to CUB5 or PAX model number for factory installation of options & meter setup. Crimson software is a free download from the Red Lion website.