



## ELC-10PR

High-density Signal Conditioners 10-RACK	
<b>PULSE SCALER</b>	MODEL <b>10PR</b>

### MODEL & SUFFIX CODE SELECTION

10PR-□□0-R

MODEL \_\_\_\_\_

INPUT \_\_\_\_\_

1 : Dry contact (max. frequency 100 kHz)  
 2 : Voltage pulse (max. frequency 100 kHz)

OUTPUT \_\_\_\_\_

1 : Open collector (max. frequency 20 kHz)  
 2 : 5V pulse (max. frequency 20 kHz)  
 3 : Relay contact (max. frequency 2 Hz)  
 4 : 24V pulse (max. frequency 20 Hz)

POWER INPUT \_\_\_\_\_

R : 24V DC

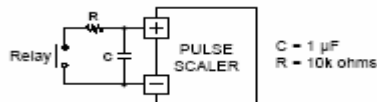
### ORDERING INFORMATION

Specify code number and variables.

- Code number (e.g. 10PR-110-R)
- Input frequency range (e.g. 0 – 356.7 Hz)
- Output frequency range (e.g. 0 – 1.00 Hz)

### REMARKS

- The 10PR's output waveform is not uniform due to its scaling method.
- Use input relays which do not cause chattering (e.g. mercury relays). Other relays could be used only with a CR filter, for 10 Hz at maximum.



### GENERAL SPECIFICATIONS

**Construction:** rack-mounted; terminal access via screw terminals at the front and via card-edge connector at the rear; terminal cover provided

**Connection:** M3.5 screw terminals (nickel-plated steel; torque  $\leq 0.8$  N·m) and card-edge connector

**Housing material:** flame-resistant resin (black)

**Power input:** supplied from card-edge connector

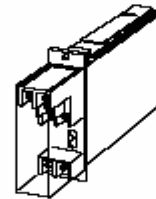
**Power fuse:** 0.5A

**Isolation:** input to output to power

**Input pulse sensing:** capacitor coupled; detecting pulse rise

**Sensitivity adjustment:** single-turn screwdriver adjustment (front); 25mV p-p – 5V p-p

**Scaling factor:**  $0.9999 \times 10^0 - 0.0001 \times 10^{-6}$



### Functions & Features

- Converting pulse rate into convenient engineering unit for display on a totalizing counter or meter
- Fuse

### Typical Applications

- Positive displacement flowmeters and turbine flowmeters
- Magnetic tachometers

### INPUT & OUTPUT

#### INPUT

Maximum frequency: 100 kHz  
 Pulse width time requirement: 5  $\mu$ sec. min. (20 msec. min. for frequencies  $\leq 10$  Hz)

• **Dry Contact:** mechanical contact or open collector  
**Sensing:** approx. 7.5V DC @1mA  
**ON/OFF level:**  $\leq 20k\Omega$  for ON,  $\geq 100k\Omega$  for OFF

• **Voltage Pulse:** square or sine waveforms\*\*  
**Input amplitude:** 25mV p-p – 50V p-p

#### Minimum amplitude requirement

With duty ratio 50%  $\pm 10\%$

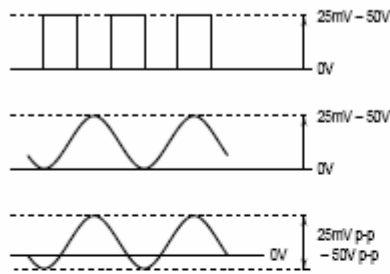
FREQUENCY	AMPLITUDE
0 – 2 kHz	25mV p-p
0 – 20 kHz	50mV p-p
0 – 40 kHz	1V p-p
0 – 100 kHz	5V p-p

With duty ratio other than 50%  $\pm 10\%$

PULSE WIDTH	AMPLITUDE
5 $\mu$ sec.	5V p-p
10 $\mu$ sec.	3.5V p-p
50 $\mu$ sec.	2V p-p
100 $\mu$ sec.	1V p-p
500 $\mu$ sec.	0.5V p-p

Specifications subject to change without notice

Input impedance: 100kΩ minimum



**OUTPUT**

•Open Collector: 50V DC @50mA (resistive load)  
 Frequency range: 0 – 20 kHz  
 ON pulse width: approx. 30 μsec.  
 Saturation voltage: 0.6V DC

•5V Pulse

Frequency range: 0 – 20 kHz  
 Low pulse width: approx. 30 μsec.  
 High level: 5V ±10%  
 Low level: ≤0.5V  
 Load resistance: 600Ω minimum

•Relay Contact: 120V AC @200mA (cosφ=1)  
 240V AC @100mA (cosφ=1)  
 24V DC @200mA (resistive load)

Frequency range: 0 – 2 Hz  
 ON pulse width: approx. 30 millisecon.  
 Relay life: ≥5 × 10<sup>7</sup> cycles (mechanical)  
 ≥10<sup>6</sup> cycles (electrical)

•24V Pulse

Frequency range: 0 – 20 Hz  
 Low pulse width: approx. 30 millisecon.  
 High level: 24V ±10%  
 Low level: ≤0.5V  
 Load current: 30mA max.  
 Load resistance: 800Ω minimum

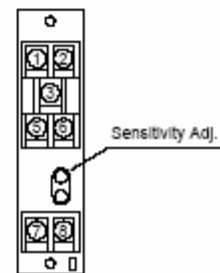
**INSTALLATION**

Power input: 24V DC ±10%, approx. 80mA  
 (ripple 10% p-p max.)  
 Operating temperature: -5 to +55°C (23 to 131°F)  
 Operating humidity: 30 to 90% RH (non-condensing)  
 Mounting: Standard Rack 10BX□  
 Dimensions: W25×H99×D180 mm (0.98"×3.90"×7.09")  
 See General Spec. Sheet Figure A-1.  
 Weight: 200 g (0.44 lbs)  
 Terminal assignment: See General Spec. Sheet Figure B-1.

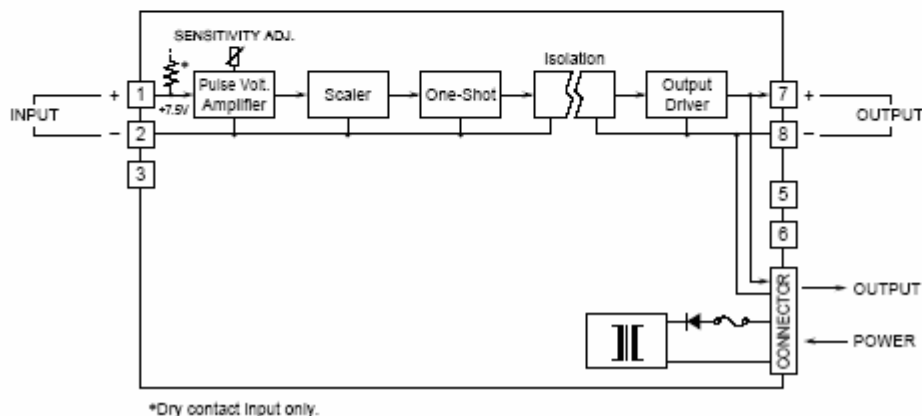
**PERFORMANCE**

Insulation resistance: ≥100MΩ with 500V DC  
 Dielectric strength: 500V AC @1 minute  
 (input to output to power)  
 1500V AC @1 minute  
 (input or output to power to ground)

**FRONT PANEL CONFIGURATION**



**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



\*Dry contact Input only.