



## ELC-10PR

### High-density Signal Conditioners 10-RACK

#### PULSE SCALER

MODEL **10PR**

#### MODEL & SUFFIX CODE SELECTION

MODEL \_\_\_\_\_ 10PR-□□0-R  
 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

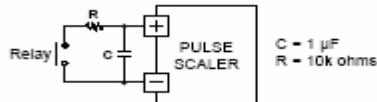
#### ORDERING INFORMATION

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

1. The 10PR's output waveform is not uniform due to its scaling method.
2. 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

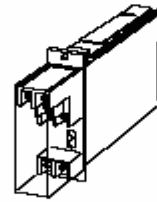
**Isolation:** input to output to power

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

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

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

ISO/A  
ST/DN



#### 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%  $\pm 10\%$

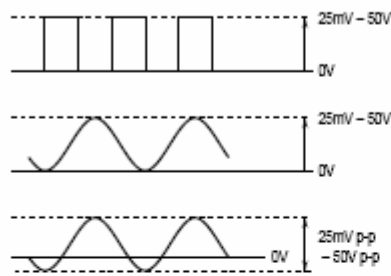
FREQUENCY	AMPLITUDE
0 – 2 kHz	25mV p-p
0 – 20 kHz	50mV p-p
0 – 40 kHz	1V p-p
0 – 100 kHz	5V p-p

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 millisecc.  
 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 millisecc.  
 High level: 24V ±10%  
 Low level: ≤0.5V  
 Load current: 30mA max.  
 Load resistance: 800Ω minimum

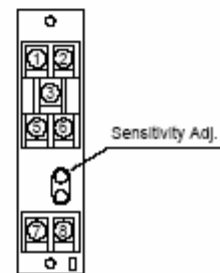
**INSTALLATION**

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.

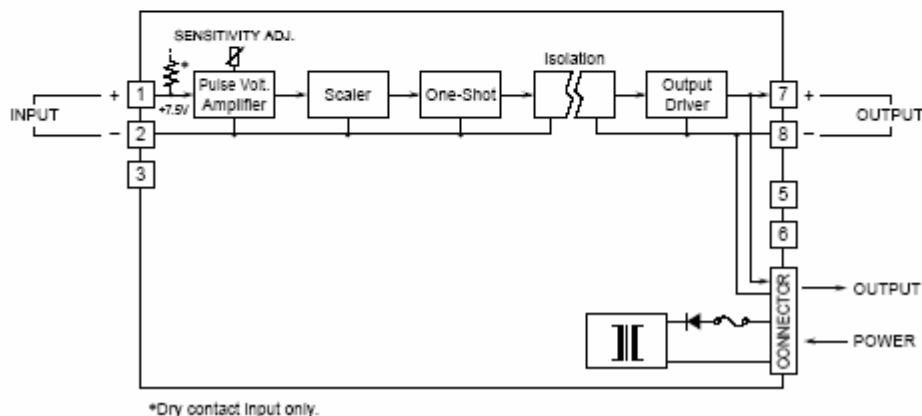
**PERFORMANCE**

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.