



ELC-10PR

High-density Signal Conditioners 10-RACK	
PULSE SCALER	MODEL 10PR

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

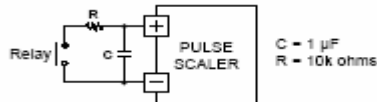
ORDERING INFORMATION

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 ≤ 0.8 N·m) and card-edge connector

Housing material: flame-resistant resin (black)

Power input: supplied from card-edge connector

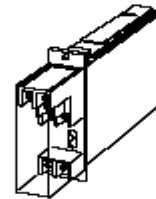
Power fuse: 0.5A

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 µsec. min. (20 msec. min. for frequencies ≤ 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% $\pm 10\%$

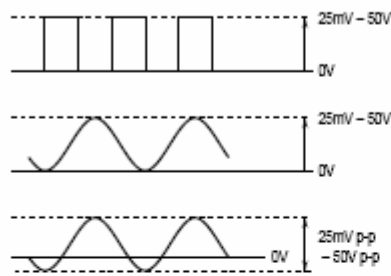
FREQUENCY	AMPLITUDE
0 – 2 kHz	25mV p-p
0 – 20 kHz	50mV p-p
0 – 40 kHz	1V p-p
0 – 100 kHz	5V p-p

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

PULSE WIDTH	AMPLITUDE
5 µsec.	5V p-p
10 µsec.	3.5V p-p
50 µsec.	2V p-p
100 µsec.	1V p-p
500 µsec.	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 × 10⁷ cycles (mechanical)
 ≥10⁶ 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

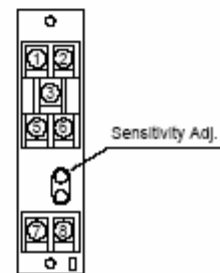
INSTALLATION

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.

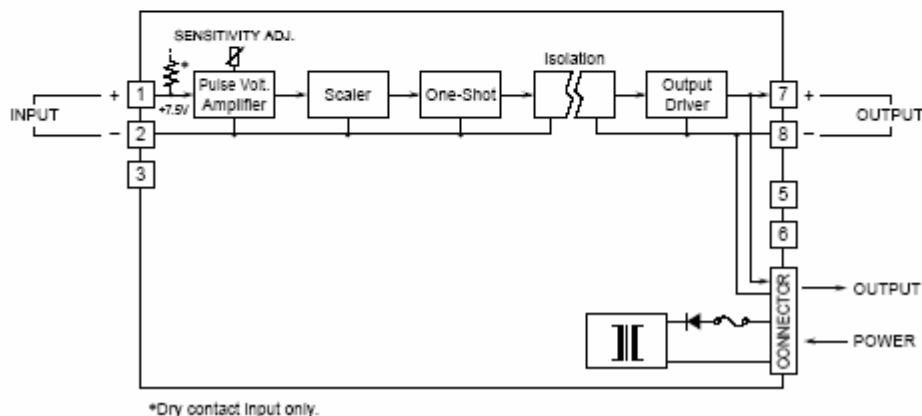
PERFORMANCE

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.