

# Isolated Timing Repeater (ITR)

Copper, Fiber,  
HV MOSFET

## Key Features

- Extends the distance of an IRIG-B or Pulse signal
- Provides isolation between A & B Protection Systems or between IEDs
- Converts a copper signal to a fiber signal (or vice versa)
- Converts low voltage (0-5 V) signal to a high voltage digital output
- Reduces wiring to panels of equipment

## About Tekron

Tekron is a leading developer of accurate GPS/GLONASS clocks and time synchronisation solutions for use in industrial applications.

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The Isolated Timing Repeater is a compact DIN rail mountable signal repeater that performs several tasks, including converting time sync signals from fiber to copper (and vice versa), boosting signal strengths, and converting one type of signal to another.

Electrically isolated, the ITR provides your Intelligent Electronic Devices (IEDs) with an additional layer of electrical protection.



Left: Fiber/HV MOSFET, Right: Copper



## Physical

UL94-V0 polycarbonate flame retardant DIN-rail mount case with IP40 (Ingress Protection rating).

(W) 55 mm x (D) 60 mm x (H) 90 mm, 0.15 Kg

Rising clamp terminals: Wire size (max): 1.5 mm  $\varnothing$

## LED Indicators

Two LEDs indicating multiple statuses, including:

- Power
- Input signal indicator

## Environment and Electrical

Power supply:

L = 14-36 Vdc  
M = 20-75 Vdc  
H = 90-300 Vdc

Power Drain:

5 W max

Operating temperature:

-10 to +65°C

Humidity:

To 95%  
non-condensing

## Isolation

Power to I/O: 2 kV

Input to Earth: 3.5 kV (min)

## Copper Version

### Inputs

The Input accepts a Digital Logic signal or DCLS IRIG-B 1 x Copper 5 V, 2 mA max

### Outputs

Outputs echo the same signal data as on the input

1 x Copper TTL 0 - 5 V, 150 mA, fused  
1 x Copper RS232  $\pm 10$  V (typical unloaded),  
15 mA (max)  
1 x Copper RS422/RS485  $\pm 5$  V, 50 RS422 unit loads  
(RS485 compatible)

### Optional Output

1 x Copper AM IRIG- B 8V, 120 $\Omega$  output impedance  
Internal Signal delay:  
Input to Copper output 85 $\pm$ 10 ns

## Fiber Version

### Inputs

Both inputs accept a Digital Logic signal or DCLS IRIG-B  
1 x ST Fiber 62.5/125  $\mu$ m,  $\lambda$  = 820 nm, multi-mode  
Receiver sensitivity  
-34.4 dBm 1 x Copper 5 V, 2 mA max

### Outputs

Outputs echo the same signal data as on the input  
1 x ST Fiber 62.5/125  $\mu$ m,  $\lambda$  = 820 nm, multi-mode  
Power budget 17.5 dB (typical)  
1 x Copper TTL 0 - 5 V, 150 mA, fused  
1 x Copper RS232  $\pm 10$  V (typical unloaded),  
15 mA (max)  
1 x Copper RS422/RS485  $\pm 5$  V, 50 RS422 unit loads  
(RS485 compatible)

### Optional Output

1 x Copper AM IRIG- B 8 V, 120 $\Omega$  output impedance  
Internal Signal delay:  
Input to Copper/Fiber output 85 $\pm$ 10 ns

## HV MOSFET Version

Inputs - See Fiber Version above

### Outputs

Outputs echo the same signal data as on the input  
1 x ST Fiber as per Fiber Version above  
1 x HV MOSFET, 300 Vdc (+0V tolerance), 100mA, high speed MOSFET,  
fused with reverse polarity and ESD protection.

Internal Signal delay: Input to HV MOSFET output 60  $\mu$ s (typical)