



# TDR-4

## Time Distribution Rack



Masibus TDR-4 Time Distribution Rack amplifies input signal which is connected on rear side and distributes via different timing outputs. Time Distribution Rack (TDR-4) accepts signals like 1PPS, IRIG-B TTL, IRIG-B Modulated, NMEA (RS232) and Event from GPS and gives four isolated outputs of each signal same as input.

TDR-4 is housed in a compact 19", 3U rack mounted package. It has nine output card slots and one power supply card slot. Each output card has 4 outputs thus maximum 36 outputs of different or same type possible in single TDR-4

TDR-4 has High Intensity LEDs on each card to shows the power status of the card and four numbers of isolated outputs signal status. All the inputs are connected on the rear side & all the output signals are on the front of the equipment.

TDR-4 has flexibility to choose from six different output cards 1PPS, IRIG-B TTL, RS232, RS485, IRIG-B Modulated, NTP and Event. Any signal output card can easily be inserted into any signal card slot excluding Power Supply Slot. If user requires more than four numbers of outputs then user has to insert another same type of the card in any slot of the TDR-4.

TDR-4 has also facility to interface redundant GPS incase of any failure occur with the first GPS.

### Features

- Timing Signals accepted from GPS:
  - 1PPS
  - IRIG-B Modulated
  - IRIG-B TTL
  - NMEA (RS232)
  - Event
- Six Different types of output cards in single rack
- Max four outputs per card.
- Any card can be inserted in any slot
- Total 36 outputs available from single rack
- Compact 19", 3U Rack mount enclosure
- Facility to interface redundant GPS Clock

### Applications

- Electrical utilities:
  - Generation
  - Transmission
  - Energy and Demand monitoring
- Distribution Interface with SCADA/RTU/ Relays
- ABT metering
- EMS system

# TECHNICAL SPECIFICATIONS

Time & Event Interface Cards																
Interface Card			Description								Input Connector		Output Connector		Output per Card	
1PPS / IRIG-B TTL Card			<ul style="list-style-type: none"><li>Input : 1 Pulse per second/ IRIG B TTL</li><li>Output: 4 nos of isolated buffered outputs 4 LEDs to show the status of each output. TTL into 50Ω</li></ul>								BNC Female		BNC Female		4	
IRIG-B Modulated Card			<ul style="list-style-type: none"><li>Input: IRIG-B AM</li><li>Output: 4 nos of isolated buffered outputs 4 LEDs to show the status of each output. 3Vp-p into 100Ω ±10%</li></ul>								BNC Female		BNC Female		4	
RS232 / RS485 Card			<ul style="list-style-type: none"><li>Input : RS232</li><li>Output: 4 nos of isolated buffered outputs LEDs to show the status of each output. Configuration of RS232 or RS485 through switch setting on the card.</li></ul>								DB9 Female		DB9 Male		4	
EVENT Card			<ul style="list-style-type: none"><li>Input: Event (1PPM/1PPH)</li><li>Output: 4 nos of isolated event output through PMOS relay contact. LEDs to show the status of each output. Rating: 350VDC/120mA</li></ul>								Plug in screw terminals (2.5mm <sup>2</sup> Conductor Size)		Plug in screw terminals (2.5mm <sup>2</sup> Conductor Size)		4	
NTP (LAN Interface)			<ul style="list-style-type: none"><li>Input : NMEA-GPRMC and 1PPS signal at RS-232 level</li><li>Output: 4 nos of isolated NTP output Protocol Support: NTP V3, SNTP Network Protocol: TCP, Telnet, UDP, IPv4</li><li>Mode: Server</li></ul>								DB9 Female		RJ45		4	
Isolation (Withstanding voltage)			Between primary terminals* and secondary terminals**: At least 1500 V AC for 1 minute Between primary terminals* and grounding terminal: At least 1500 V AC for 1 minute Between grounding terminal and secondary terminals**: At least 1500 V AC for 1 minute Between secondary terminals**: At least 500 V AC for 1 minute * Primary terminals indicate power terminals and Input terminals. ** Secondary terminals indicate Output Ports. Insulation resistance: 50MΩ or more @ 500 V DC between power terminals and grounding terminal.													
Special Feature						Physical										
<div>Redundancy</div> <ul style="list-style-type: none"><li>Input: Alarm Outputs (Power failure, GPS Lost, Watchdog) from primary and secondary GPS clock.</li><li>Continuous monitor status of alarm outputs of GPS clock</li><li>Switch to the secondary clock input in case of failure of primary clock.</li></ul>						Mounting		19", 3U Rack mount								
						Dimensions (in mm)		133 (H)x483(W)x260(D)								
						Weight		Approx 5 kg								
						Ingress protection		IP20								
						Environmental										
						Operating temperature		0 to +55 °C								
						Storage temperature		-20 to +80 °C								
Interface						Humidity		20-90% RH Non Condensing								
Display LED			<ul style="list-style-type: none"><li>Power LED</li><li>Individual Output Status LEDs per Card</li></ul>													
Power Supply																
Power supply			90-264V AC or 90-300V DC									24 VDC (optional)				
Power consumption			50 W [max]													

Ordering Code												Select ordering Code for each of Card No X	
Model	Power supply		Slot (select code for card type as per given table)									Code	Card Type
TDR-4	XX		Card-1	Card-2	Card-3	Card-4	Card-5	Card-6	Card-7	Card-8	Card-9	N	None
	U1	90-264V AC/ 90-300V DC	X	X	X	X	X	X	X	X	X	1	IRIG-B Modulated
	U2	24VDC										2	IRIG-B TTL
												3	1 PPS
												4	RS232
												5	1 PPM /Event
												6	NTP
												7	RS485
												8	1 PPH / Event
												S	Special

**E.g.:** If you require 12 nos. IRIG-B modulated & 12 nos. NTP nos. output with AC Power Supply then TDR 4-U1-111666NNN will be the ordering code.

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All specifications are subject to change without notice due to continuous improvements.  
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