

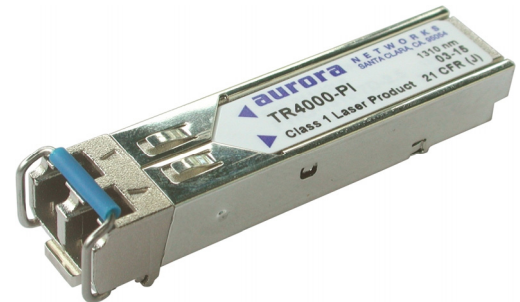
# SFP Fiber Optic Transceivers

## TR40x0-PI

### 2.125 Gbps 1310 nm Optical Transceiver Modules

## FEATURES

- Interconnects ARRIS digital transport devices
  - Media converter access products for links up to 40 km
  - Selected node-based Digital Transceivers (models DT4xxxN and DT4250N) for links up to 40 km
  - Enables Ethernet drops from fiber node platforms
- Up to 2.125 Gbps bi-directional data links
- Small Form Factor Pluggable (SFP)
- Duplex LC connector
- Very low jitter
- Metal enclosure for lower EMI
- 3.3 V power supply with low power dissipation
- Extended operating temperature range



## PRODUCT OVERVIEW

The TR4000-PI and TR4040-PI Optical Transceiver Modules feature capabilities for high-speed bi-directional communications required for ARRIS digital networking products. These SFP modules are functionally identical to the transceivers already built into many ARRIS products, but provide a flexible, plug-in means of enabling additional optional secondary ports in several of those products.

Conforming to the Small Form Factor Pluggable (SFP) Multisource Agreement, these state-of-the-art components are designed expressly for high-speed bi-directional communication applications that support rates of up to 2.125 Gbps, with the laser transmission portion of the device operating at a wavelength of 1310 nm.

These transceivers feature a very low jitter contribution, resulting in extremely clean, high-quality eye patterns. The SFP metal enclosures not only makes them sturdier, but also improves their FCC test margins. This emission and ESD control is particularly important in applications with sensitive multiport hubs and switches. The modules operate at extended voltage (3.15 to 3.6 V) and temperature (–40° to +85°C) ranges, and all modules are supplied with a duplex LC connector.

The TR4000-PI SFP transceiver supports optical links up to 10 km and the TR4040-PI supports optical links up to 40 km. These transceivers can be ordered as optional primary or secondary plug-in modules to support the capabilities of digital transmitter units in NC4000 series nodes such as the legacy DT4xxx-00/01 Digital Transceivers and the DT4250N Universal Digital Transceiver.

The TR40x0-PI series SFP transceivers may also be used to populate the primary network and local ports of the DS4004 Optical Ethernet Multiplexer for NC4000 series nodes, and are used on other products as described on individual product data sheets.

SPECIFICATIONS		
Characteristics	Specification	
<b>Physical</b>		
Dimensions	2.2" L x 0.4" H x 0.5" W (5.6 cm x 1.0 cm x 1.3 cm)	
Weight	0.1 lbs (0.05 kg)	
<b>Environmental</b>		
Application temperature range	–40° to +85°C (–40° to +185°F)	
Storage temperature range	–40° to +85°C (–40° to +185°F)	
Humidity	5% to 95% non–condensing	
<b>Optical Interface</b>		
Optical connectors	Duplex LC	
<b>Power requirements</b>		
Input voltage	3.3 V <sub>DC</sub> (250 mA max)	
Power consumption	<ul style="list-style-type: none"> <li>TR4000-PI: 1.0 W</li> <li>TR4040-PI: 1.1 W</li> </ul>	
<b>General</b>		
Supported link length	<ul style="list-style-type: none"> <li>TR4000-PI: 10 km (on SMF-28 or equivalent)</li> <li>TR4040-PI: 40 km (on SMF-28 or equivalent)</li> </ul>	
Data rate	2.125 Gbps	
Hot plug–in/out		
<b>Optical</b>		
<b>Transmitter</b>		
	<b>TR4000-PI</b>	<b>TR4040-PI</b>
Transmitter type	Fabry-Perot	DFB
Center wavelength (nm)	1310	1310
Optical output power, min (dBm)	–6	–1
<b>Receiver</b>		
Center wavelength (nm)	1310	1310
Receiver sensitivity (input power), min (dBm)	–18	–21
Receiver overload (input power), max (dBm)	0	0
Return loss, min (dB)	12	27
<b>Regulatory</b>		
Class 1 product per IEC-60825-1		
Complies with 21 CFR 1040.10 and 21 CFR 1040.11		

## ORDERING INFORMATION

Part Number	Description
TR4000-PI	2.125 Gbps 1310 nm Small form Factor Pluggable (SFP) Transceiver, 10 km
TR4040-PI	2.125 Gbps 1310 nm Small Form Factor Pluggable (SFP) Transceiver, 40 km

## RELATED PRODUCTS

Media Converter access products	NC2000 and NC4000
DT4xxxN Digital Transceivers	DS4004 Optical Concentrator

## Customer Care

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

**Note:** Specifications are subject to change without notice.

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