



## DESCRIPTION

The IFS DT4000 series active optical star coupler provides bi-directional distribution of an optical signal to three optical ports. The system can be expanded up to 28 optical ports by utilizing the built-in expander connection on the modules. The D1010 and D2100 series transceivers are fully compatible with this module when used as RS-232/422 input/output devices. Models within this series are available for use with multimode or singlemode optical fiber. Plug-and-play design ensures ease of installation requiring no electrical or optical adjustments for either a single unit or when expanding the system. Each module incorporates power and transmit/receive status indicating LED's for each optical port for monitoring proper system operation. The modules are available as stand-alone versions only.

## APPLICATION EXAMPLES

- Access Control Systems
- Building Automation and Environmental Control Systems
- Computer/Data Equipment
- Traffic Signal Control Equipment

## FEATURES

- Bi-directional Distribution of Optical Signals
- System can be Expanded up to 28 Optical Ports
- Star Transmission Architecture
- No In-field Electrical or Optical Adjustments Required
- Power and Optical Port Status LED Indicators
- Automatic Resettable Solid-State Current Limiters
- NTCIP Compatible
- Tested and Certified by an Independent Testing Laboratory for Full Compliance with the Environmental Requirements (Ambient Operating Temperature, Mechanical Shock, Vibration, Humidity with Condensation, High-Line/Low-Line Voltage Conditions and Transient Voltage Protection) of NEMA TS-1/TS-2 and the Caltrans Specification for Traffic Signal Control Equipment.
- Distances up to 26 Miles (42 km)
- Comprehensive Lifetime Warranty

Available at: **www.ifs.com**

- A & E Specifications, (CSI)
- AutoCAD Drawings
- Operation Manuals
- Technical Bulletins

## ORDERING INFORMATION

	PART NUMBER	DESCRIPTION	FIBERS REQUIRED	OPTICAL PWR BUDGET	MAX. DISTANCE*
MULTIMODE 62.5/125μm**	DT4010	4 port active optical star (850nm)	4 In/4 Out	17 dB	3 miles (4.5 km)
	DT4020	4 port active optical star (1310nm)	4 In/4 Out	13 dB	8 miles (13 km)
SINGLEMODE 9/125μm	DT4025	4 port active optical star (1310 nm)	4 In/4 Out	14 dB	26 miles (42 km)
ACCESSORIES♦	PS-12VDC 12 Volt DC Plug-in Power Supply (Included) PS-12VDC-230 12 Volt DC Plug-in Power Supply, 230 VAC Input (Included if specified at time of order)				
OPTIONS	Add '-R3' to Model Number for R3 Rack Mount (Requires R3 Rack purchased separately) Add '-C' for Conformally Coated Printed Circuit Boards (Extra charge, consult factory)				

\* Optical transmission distance is limited to optical loss of the fiber and any additional loss introduced by connectors, splices and patch panels. Distance can also be limited by fiber bandwidth. \*\* For 50/125 Fiber, subtract 4 dB from Optical Power Budget.

♦ All accessories are third party manufactured.



# TECHNICAL SPECIFICATION

## FOUR PORT ACTIVE OPTICAL STAR COUPLER

### DT4000 SERIES

#### SPECIFICATIONS

##### DATA

Data Interface: RS232, RS422  
Data Rate: DC-100 kbps (NRZ)  
Bit Error Rate: < 1 in 10<sup>-9</sup>

##### WAVELENGTH

DT4010: 850 nm, Multimode  
DT4020: 1310 nm, Multimode or Singlemode  
DT4025: 1310 nm, Multimode or Singlemode

**NUMBER OF FIBERS** 4 In/4 Out

##### CONNECTORS

Optical: ST  
Data and Power: Terminal Plug with screw clamps

#### ELECTRICAL & MECHANICAL

Power: +12 VDC @ 250 mA  
Surface Mount: From Rack  
Rack: Automatic Resettable Solid-State Current Limiters  
Circuit Board: Meets IPC Standard  
Size (in./ cm.) (LxWxH): 9.0 x 6.0 x 1.0 in., 23.9 x 15.2 x 2.5 cm.  
Shipping Weight: < 2 lbs./0.9 kg

#### ENVIRONMENTAL

MTBF: >100,000 hours  
Operating Mode: Simplex or Full Duplex  
Operating Temp: -40° to 74° C  
Storage Temp: -40° to 85° C  
Relative Humidity: 0% to 95% (non-condensing)†

† May be extended to condensation conditions by adding suffix '-C' to model number for conformal coating.

#### AGENCY COMPLIANCE

**FCC** PART 15 COMPLIANT



#### MADE IN THE USA

Complies with FDA Performance Standard for Laser Products, Title 21, Code of Federal Regulations, Subchapter J

#### OPTICAL POWER BUDGET

FIBER	WAVELENGTH	TRANSMITTER			OPTICAL PWR BUDGET	MAX. DISTANCE*
		MODEL	OUTPUT PWR	SENSITIVITY		
Multimode 62.5/125µm**	850 nm	DT4010	25 µw (-16 dBm)	1 µw (-30 dBm)	14 dB	3 miles (4.5 km)
		DT4020	20 µw (-17 dBm)		13 dB	8 miles (13 km)
Singlemode 9/125µm	1310 nm	DT4025	100 µw (-10 dBm)		14 dB	26 miles (42 km)

\* Optical transmission distance is limited to optical loss of the fiber and any additional loss introduced by connectors, splices and patch panels. Distance can also be limited by fiber bandwidth. \*\* For 50/125 Fiber, subtract 4 dB from Optical Power Budget.

#### SYSTEM DESIGN

