

FIBER OPTIC 1xN SWITCH

coaxial design

OVERVIEW

Sercalo's fiber optic multimode 1x4 switch is bidirectional opto-mechanical switches based on a coaxial design where a single MEMS mirror redirects light from a common fiber to one of N ports.

The underlying MEMS technology results in low insertion loss and low crosstalk between channels while keeping a constant switching performance over billion of switch cycles. The switch communicates over a UART, I²C/SMBus or TTL-compatible parallel interface.

The MEMS component is hermetically sealed. The part is designed to conform to Telcordia 1221 reliability standards. No epoxy is present in the optical path. The miniature package withstands rugged environments and is well suited for direct mounting on printed circuit boards.

APPLICATIONS

- *Telecom*
- *Instrumentation*
- *Test and measurement*

FEATURES

- Low insertion loss
- Reliable
- UART, I²C/SMBus and parallel interface
- Ethernet interface available on request

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Sercalo

DESCRIPTION

Sercalo's COAXIAL TYPE 1x4 switches are based on a bidirectional architecture. The switch is non latching type and at power-off the connections are in a undefined state, i.e. some high insertion loss links may be established when power is removed.

The switch works over a single band at specified performance. When the wavelength range covers more than one band, the insertion loss increases, but the switching function is still performed.

TECHNICAL SPECIFICATIONS for Multi Mode fiber

	Unit	Min	Typ	Max
Optical Specifications				
850 nm Wavelength range ¹	nm	800		1000
1250 to 1370 nm Wavelength range ¹	nm	1250		1370
Insertion loss 1x4 ²	dB		0.7	1.5
Crosstalk	dB	40	50	
Return loss	dB	23	35	
Switching time	ms		2	10
Cycle Rate	Hz		1	50
Repeatability ³	dB			0.01
Durability	cycles	No wear out		
Electrical Specifications				
Supply voltage	V	4.75	5	5.25
Power consumption, normal mode	mW			75
Power consumption, standby	mW		20	
UART speed	baud	9600		115200
SMBus/I ² C bus speed	kbps			400
Logic level low	V		0	0.6
Logic level high	V	2.4	5	
Reset inactive voltage ⁴	V	2.4	5	
Reset active voltage	V		0	0.9
Reset pulse duration	µs	15		
Package				
Operation temperature	°C	-10		70
Storage temperature	°C	-40		85
Pigtail length	cm	50		100
Weight	g	75		
Dimensions	mm	40 x 21 x 8		

¹ Insertion loss is optimized for one band. If the switch is operated over two bands add 0.3 dB to IL. If the switch is operated over all four bands add 1 dB to IL. ² Values for standard range at 25°C, without connectors. ³ For constant temperature and polarization. ⁴ Through onboard pull-up resistor.

ORDERING INFORMATION (this component is not offered for sale to customers in the USA)

SC-F	1x4	-	50	B
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Switch type:

SC-F= 800 – 1000 nm
SC-O = non-latching, 1250 – 1370 nm

Network:

1x4

Fiber type:

50 = OM3
62 = OM1

Fiber sleeve type:

B = 250 um bare fiber

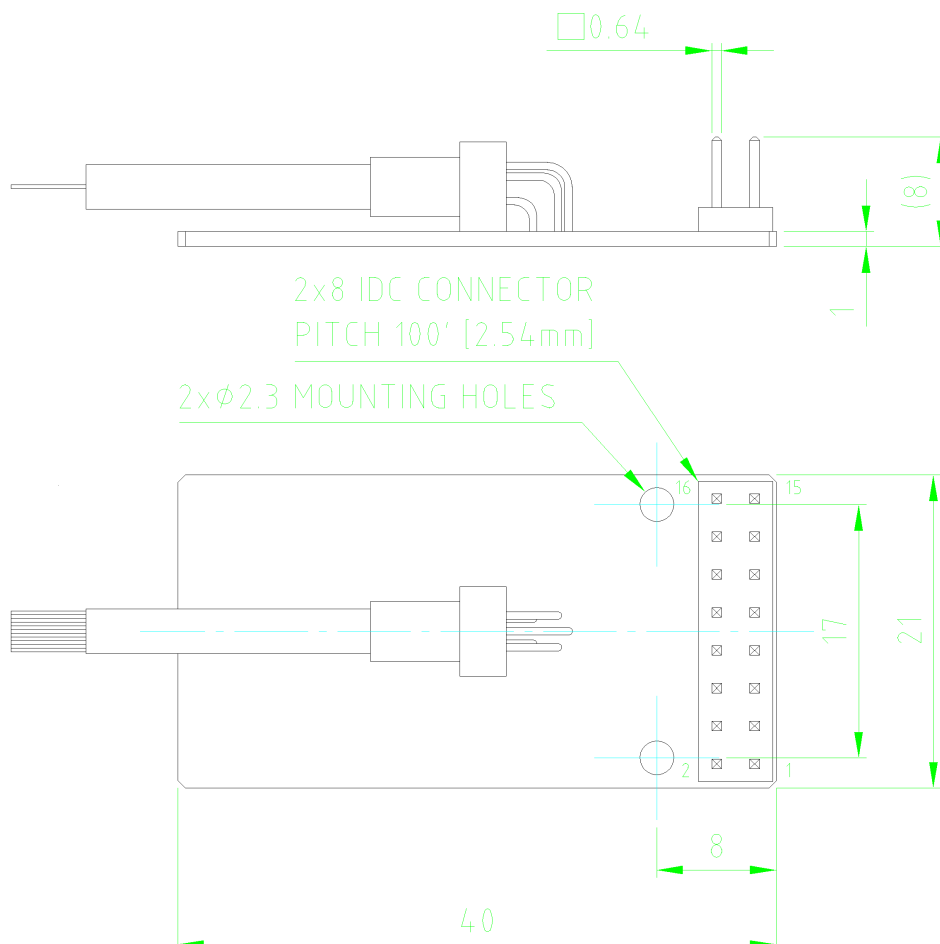


CONNECTOR PINOUT

Pin number	Description
1	Parallel PD3
2	Parallel PD4
3	Parallel PD1
4	Parallel PD2
5	Parallel STROBE
6	Parallel PD0
7	Ground (GND)
8	Supply voltage (V _{DD})
9	Reserved ⁴
10	UART TX data
11	Reserved ⁴
12	UART RX data
13	System reset (/RST)
14	SMBus/I ² C SDA
15	SMBus/I ² C SCL
16	Ground (GND)

⁴Let reserved pins unconnected.

PRODUCT DIMENSIONS (IN MILLIMETERS)



FUNCTIONAL BLOC DIAGRAM

