

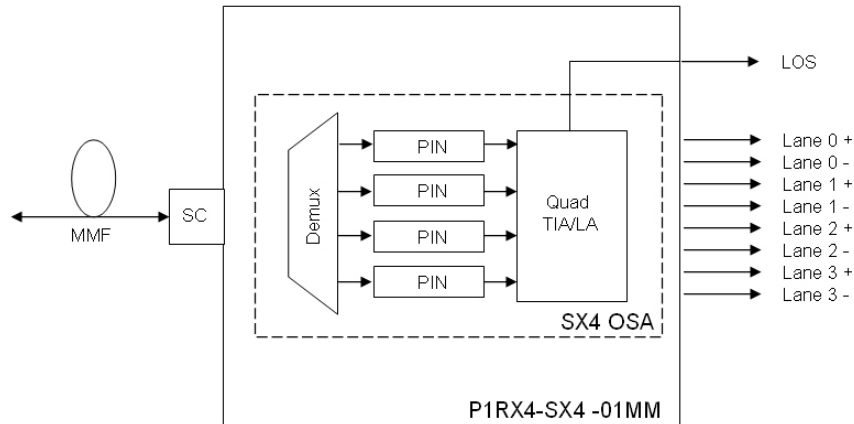
1.0 Description

The P1RX4C-SX4x-01MM (SX4 ROSA Module) is an optical to electrical (O-E) module that receives four video- or data-channels from one singlemode or multimode fiber. With the TIA and Limiting Amp embedded in the OSA and enclosed in an EMI shielded metal housing, the SX4 ROSA module is a fully integrated receiver versatile enough to be designed in to a variety of systems.



2.0 Features

- Multiple signals from one Multimode fiber
- Integrated TIA and Limiting Amp
- Metal enclosure with SC optical interface
- CML outputs



This device is **EXTREMELY SENSITIVE** to Electrostatic Discharge (ESD). At a minimum, all handling must be performed in accordance with an ANSI-compliant ESD Control Program (ANSI/ESD S20.20-2007) to mitigate possible ESD-induced damage. Reliability and life of the device will be adversely affected if these precautions are not met.



This device is a Class 3R Laser device (per IEC 60825-1:2007) and can cause damage to eye sight if used improperly. Refer to ANSI Z136 for proper handling and usage of Class 3R devices.



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3.0 Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Units
Storage Temperature ^{1,3}	Tst	-40		85	°C
3.3V Supply Voltage	VCC1	-0.3		3.6	V
Operating Surface Temperature ²	Ta	0		65	°C
Operating Humidity ³	RH			80	%
Durability – SC Connector			200		cycles
Durability – Plug-down Connector			50		cycles

4.0 Optical Characteristics

Parameter (per channel)	Symbol	Min	Typ	Max	Units
Wavelength – Lane 0			778		nm
Wavelength – Lane 1			800		nm
Wavelength – Lane 2			825		nm
Wavelength – Lane 3			850		nm
Data Rate per Channel ⁴				1.65	
P1RX4C-SX4V-01				3.50	
P1RX4C-SX4D-01	D _R				Gb/s
Peak Optical Input Power	Pin			4.0	dBm
OMA Sensitivity ⁵		-14.25	-16.00		dBm

¹ Stresses listed may be applied without causing damage. Functionality at or above the values listed is not implied. Exposure to these values for extended periods may affect reliability.

² See outline drawing for measurement point.

³ Non condensing, 80% RH.

⁴ Requires DC-balanced data pattern and max run rate of 80 bits. Measured with input signals conforming to HDMI rev 1.3a, section 4.2.5, figure 4-20.

⁵ Optical Modulation Amplitude. Based on an unstressed input signal.

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5.0 Electrical Specifications

Parameter	Symbol	Min	Typ	Max	Units
Low Frequency Cutoff	F _{CUTOFF}		175		kHz
Total Jitter (RMS), per lane ⁶	T _{J1}		10		ps
Differential Output Voltage ⁷	V _{OD}		500		mVp-p
Loss of Signal Assert Sensitivity	LOS _{SEN-ON}		-14.50		dBm
Loss of Signal De-Assert Sensitivity	LOS _{SEN-OFF}		-13.00		dBm
Loss of Signal Output Low ⁸	V _{LOS}			0.7	V
Loss of Signal Output High	V _{LOS}	2			V
Operating Supply Voltage	V _{CC}	3.15	3.30	3.54	V
Operating Supply Current	I _{CC}		127		mA

⁶ Based on a jitter-free source

⁷ CML interface through a 100-ohm differential load.

⁸ This output is asserted low when a loss of signal is detected on all Lanes

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6.0 Pin Numbers and Descriptions

The RX-SX4 plugs into a 30 pin connector. For information on the specifications of the connector, contact Hirose (DF12(4.0)-30DP-0.5V(86)).

Pin #	Signal	Description
1	GND	Ground
2	LOS	Global Loss of Signal Indicator
3	+TD0	Positive Data Output (778nm)
4	NC	No Connect ⁹
5	-TD0	Negative Data Output (778nm)
6	NC	No Connect ⁹
7	+TD1	Positive Data Output (800nm)
8	NC	No Connect ⁹
9	-TD1	Negative Data Output (800nm)
10	NC	No Connect ⁹
11	+TD2	Positive Data Output (825nm)
12	NC	No Connect ⁹
13	-TD2	Negative Data Output (825nm)
14	NC	No Connect ⁹
15	+TD3	Positive Data Output (850nm)
16	NC	No Connect ⁹
17	-TD3	Negative Data Output (850nm)
18	NC	No Connect ⁹
19	GND	Ground
20	NC	No Connect ⁹
21	NC	No Connect ⁹
22	NC	No Connect ⁹
23	NC	No Connect ⁹
24	NC	No Connect ⁹
25	NC	No Connect ⁹
26	NC	No Connect ⁹
27	NC	No Connect ⁹
28	VCC	3.3 volt input.
29	GND	Ground
30	VCC	3.3 volt input.

7.0 Laser Safety

The P1RX4-SX4x-01 meets Class-3 requirements.

⁹ NC = No Connect. Do not connect anything to this pin.

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8.0 Environmental Standards

Omron Network Products designs and manufactures its products to minimize the negative impact on our environment. As such, the P1RX4C-SX4-01MM conforms to a variety of environmental and safety standards

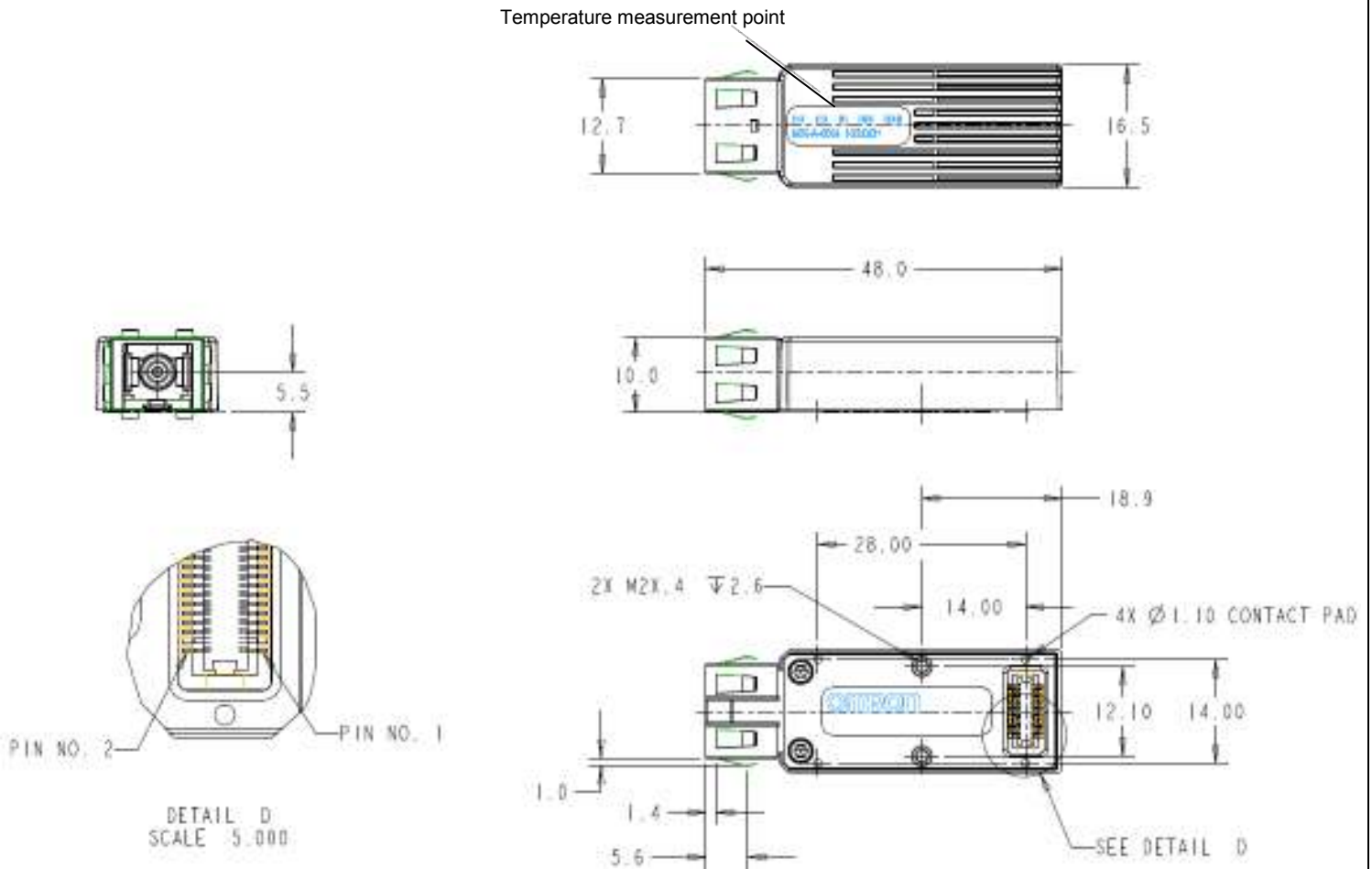
Standard	Compliant	Certificate Available
RoHS	Yes	Yes

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Dimensions

The SX4 ROSA is designed to work with a standard SC ferrule only. Insertion of any other type may result in damage.

Dimensions (mm) and orientation are for reference only.



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