

# CrystalView DVI Micro LT

Multi-mode or Single-mode DVI Fiber Extender

## Installation and Operation Manual



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# LIMITED WARRANTY

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Rose Electronics® warrants the CrystalView DVI Micro LT Extender to be in good working order for one year from the date of purchase from Rose Electronics or an authorized dealer. Should this product fail to be in good working order at any time during this one-year warranty period, Rose Electronics will, at its option, repair or replace the Unit as set forth below. Repair parts and replacement units will be either reconditioned or new. All replaced parts become the property of Rose Electronics. This limited warranty does not include service to repair damage to the Unit resulting from accident, disaster, abuse, or unauthorized modification of the Unit, including static discharge and power surges.

Limited Warranty service may be obtained by delivering this unit during the one-year warranty period to Rose Electronics or an authorized repair center providing a proof of purchase date. If this Unit is delivered by mail, you agree to insure the Unit or assume the risk of loss or damage in transit, to prepay shipping charges to the warranty service location, and to use the original shipping container or its equivalent. You must call for a return authorization number first. Under no circumstances will a unit be accepted without a return authorization number. Contact an authorized repair center or Rose Electronics for further information.

ALL EXPRESS AND IMPLIED WARRANTIES FOR THIS PRODUCT INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO A PERIOD OF ONE YEAR FROM THE DATE OF PURCHASE, AND NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THIS PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

IF THIS PRODUCT IS NOT IN GOOD WORKING ORDER AS WARRANTIED ABOVE, YOUR SOLE REMEDY SHALL BE REPLACEMENT OR REPAIR AS PROVIDED ABOVE. IN NO EVENT WILL ROSE ELECTRONICS BE LIABLE TO YOU FOR ANY DAMAGES INCLUDING ANY LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF OR THE INABILITY TO USE SUCH PRODUCT, EVEN IF ROSE ELECTRONICS OR AN AUTHORIZED DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY OTHER PARTY.

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# TABLE OF CONTENTS

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## Contents

Disclaimer	1
System Introduction	1
Features	1
Package Contents	2
Compatibility	2
Application Examples	2
CrystalView DVI Micro LT Models	3
Installation Procedure	4
System Connection	4
LC Fiber	4
Status Indicators	4
Manual Self-EDID Programming	4
Programming Procedure	5
Device Power	5
AC/DC Power Adaptor	5
DVI Panel Layout - Connectors and LED's	6
DVI Connector - Pin Designations	7
Safety	8
Maintenance and Repair	9
Technical Support	9
Appendix A — Specifications	10

## Figures

Figure 1. CrystalView DVI Micro, front and back composite	3
Figure 2. Connecting the CrystalView DVI Micro LT	4
Figure 3. Active Power LED	5
Figure 4. DVI panel layout (transmitter and receiver)	6
Figure 5. DVI-D (male) connector pinout	7

## Tables

Table 1. DVI connectors and LED's .....	6
Table 2. DVI Pin designations .....	7

## Appendices

Appendix A — Specifications	10
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# INTRODUCTION

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## Disclaimer

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While every precaution has been taken in the preparation of this manual, the manufacturer assumes no responsibility for errors or omissions. Neither does the manufacturer assume any liability for damages resulting from the use of the information contained herein. The manufacturer reserves the right to change the specifications, functions, circuitry of the product, and manual content at any time without notice.

The manufacturer cannot accept liability for damages due to misuse of the product or other circumstances outside the manufacturer's control. The manufacturer will not be responsible for any loss, damage, or injury arising directly or indirectly from the use of this product (See limited warranty).

## System Introduction

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Thank you for choosing the Rose Electronics CrystalView DVI Micro LT fiber extender.

Utilizing both single-mode and multi-mode optical fiber, the product transmits DVI signals up to 1640ft (500m) on multi-mode fiber, and 4920ft (1500m) on single-mode fiber. The built-in EDID technology provides ease of installation and flexible compatibility with any display, regardless of resolution. In addition, the front-panel placement of the EDID button, power supply input, and status indicators allows for the convenient operation and monitoring of the module.

The instructions in this manual assume a general knowledge of computer installation procedures, familiarity with cabling requirements, and some understanding of DVI and EDID device operation. An external power is required to operate this device.

## Features

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- Compact Size (H x W x D : 0.58" x 1.54" x 2.12" / 14.6mm x 39.0mm x 53.9mm )
- Duplex LC fiber optic connectors
- Single-mode or Multi-mode Fiber
- Long distance transmission of high resolution DVI video signals up to 1920 x 1200@60Hz)
- Transmitter can be programmed with the EDID of any display
- Indicators for transmitter and receiver signal status
- Single +5V power supply for receiver, optional +5V power supply for transmitter
- Metal enclosure
- Low power consumption
- RoHS compliant

## Package Contents

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CrystalView Micro LT unit

- 1x 5V 0.85A power supply
- User Manual

Additional power supply and cables can be ordered separately. If the package contents are not correct, contact Rose Electronics or your reseller so the problem can be quickly resolved.

## Compatibility

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**Hardware:** Any device with DVI video input or output

**Operating Systems:** All operating systems

## Application Examples

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The CrystalView DVI Micro LT is ideal for use in mechanical or industrial environments, hazardous operational areas and between buildings.

- Industrial control
- Operational campus
- Transportation systems, ports and railways
- Mobile cranes

# MODELS

## CrystalView DVI Micro LT Models

The CrystalView DVI Micro LT comes in a single model. The following figures show the buttons and connectors on the unit.

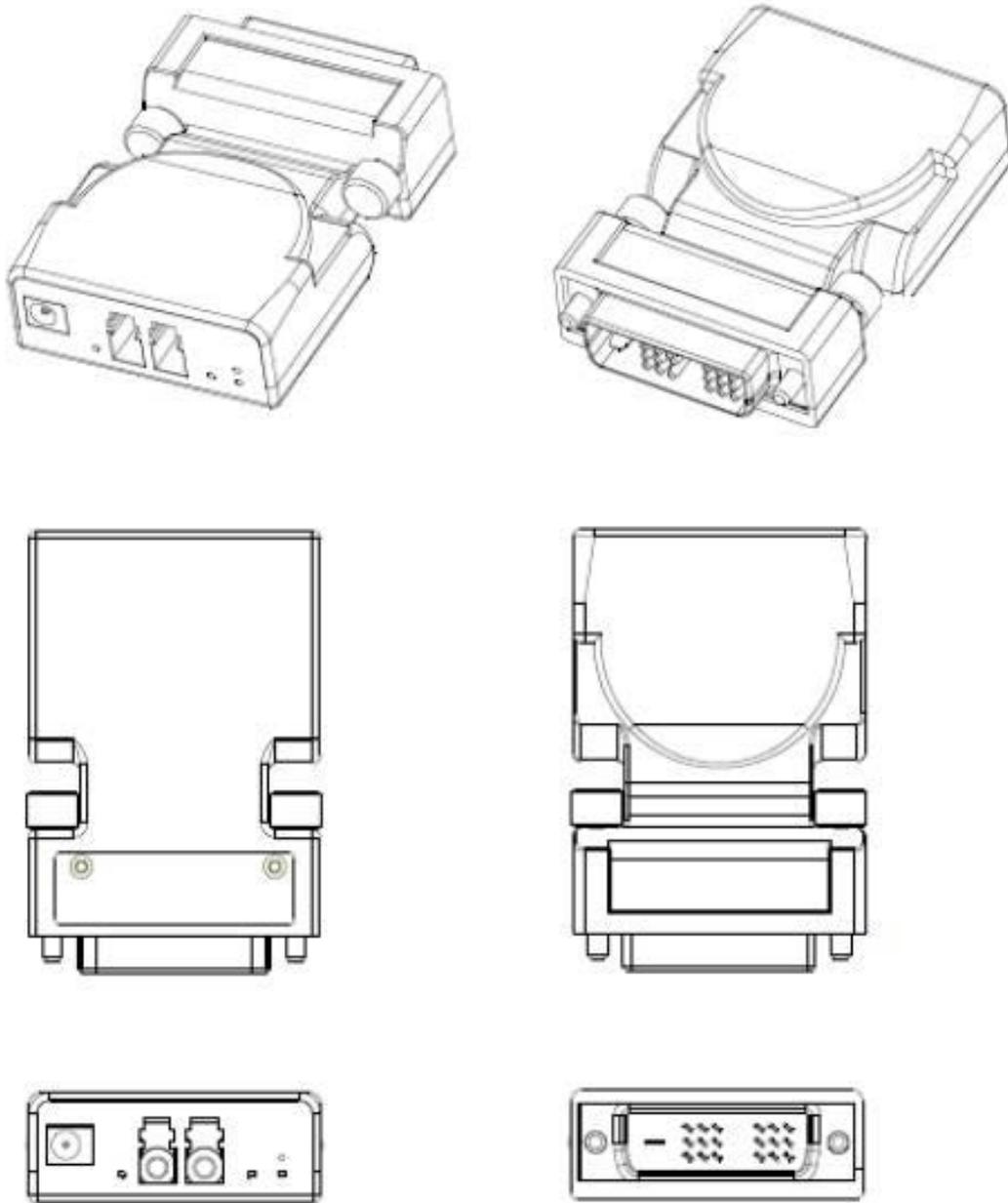


Figure 1. CrystalView DVI Micro, front and back composite

# INSTALLATION

## Installation Procedure

Before beginning an installation, ensure you have all products and components ready for the installation

### System Connection

Connect the transmitter to the DVI source, and the receiver to the DVI display.

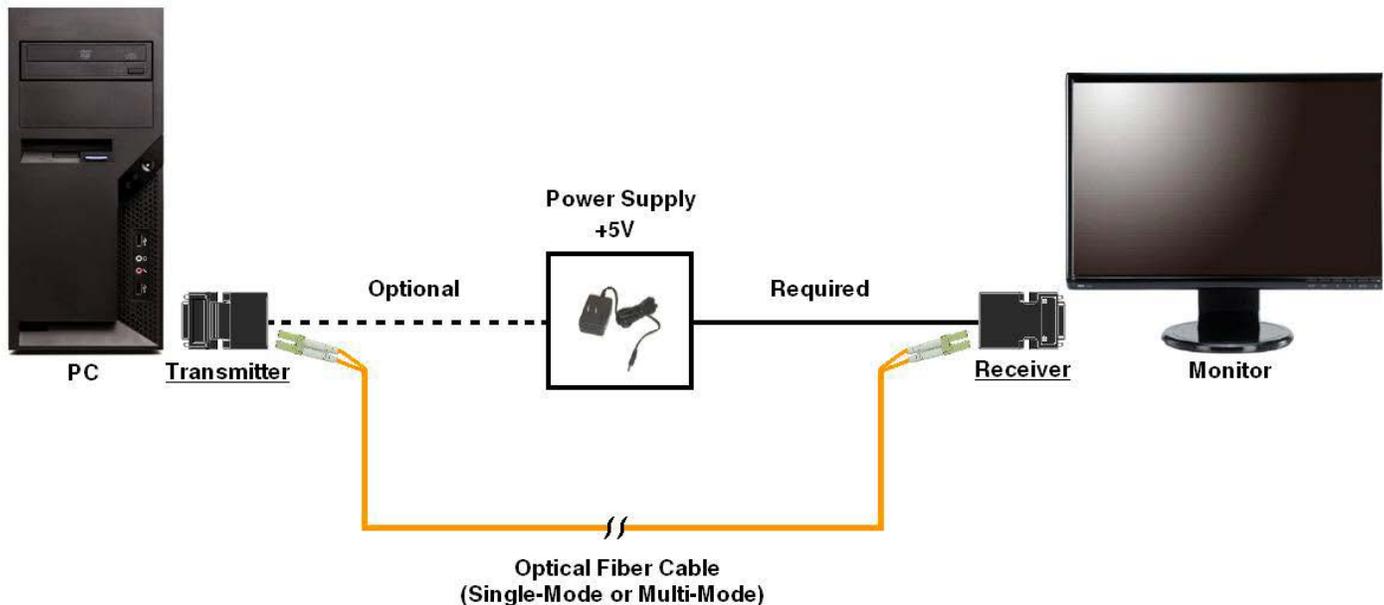


Figure 2. Connecting the CrystalView DVI Micro LT

### LC Fiber

Plug the duplex LC fiber into the LC connectors on the CrystalView DVI Micro LT transmitter and receiver units. When the fiber is connected properly, the "Fiber LOS" LED will be blinking. Depending on the requirement of the host devices, the optical extender will utilize either single-mode or multi-mode fiber.

### Status Indicators

The correct installation of the device results in a steady green signal on the transmitter's Laser Active Indicator and a blinking orange signal on the LOS Receiver LED.

### Manual Self-EDID Programming

The EDID (Extended Display Identification Data) contains information on a monitor's capabilities. A default EDID is programmed into the transmitter unit. If this table works with a DVI source, it is not necessary to reprogram the extender. CrystalView DVI Micro LT can also be programmed with any display's EDID table, to provide full compatibility with the display.

## Programming Procedure

Insert a small pin or paper clip into the EDID button hole, and press and hold down the button. Release the button once the EDID indicator begins to blink rapidly. Connect the transmitter unit to the DVI cable of the display. When the contents of the display EDID are recorded, the EDID indicator will stop flashing and remain steadily illuminated.

To restore the factory default EDID information, insert the pin into the EDID button hole and press the button continuously. The EDID indicator will light up. Release the button when the indicator is again illuminated, indicating that the default EDID has been restored.

## Device Power

Power on the display and plug the AC/DC power adaptor into the transmitter. Check that the Power indicator and EDID indicator are illuminated

## AC/DC Power Adaptor

**Transmitter Unit:** There are two power input options for the CrystalView DVI Micro LT Transmitter unit. Power is normally supplied from the graphic card through PIN14 (+5V) of the DVI connector. However, if the power output of the graphic card is insufficient for the operation of the transmitter unit, an AC/DC power adaptor may be used to power the unit. Built-in protection circuits are used to accommodate dual power inputs. The power indicator LED will be illuminated when sufficient power is applied.

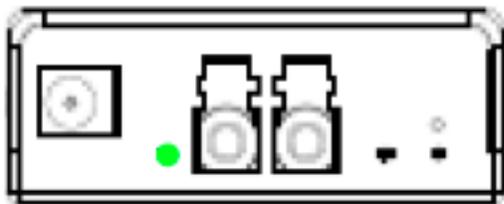


Figure 3. Active Power LED

**Receiver Unit:** The CrystalView DVI Micro LT receiver module requires the included external AC/DC power adaptor to operate.

## DVI Panel Layout – Connectors and LED’s

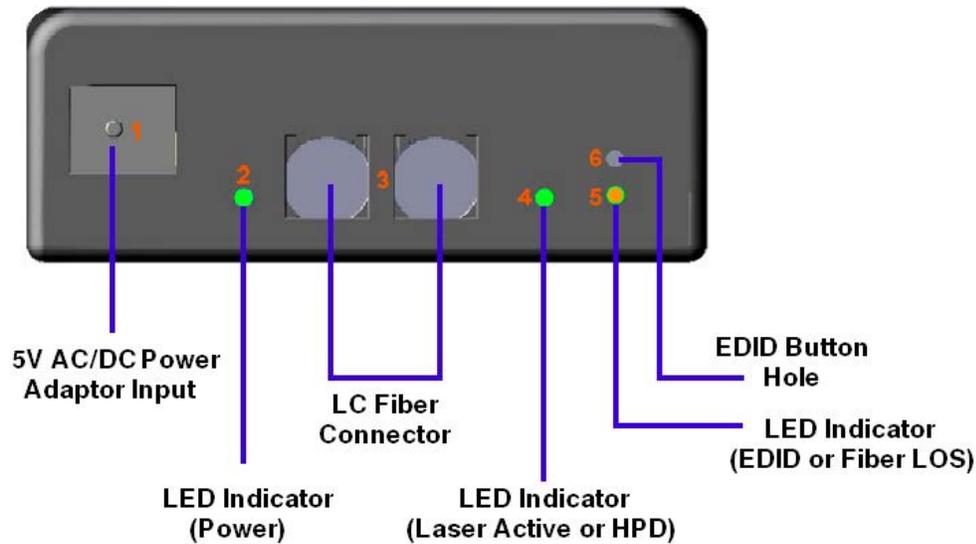


Figure 4. DVI panel layout (transmitter and receiver)

DVI Panel - Connectors and LED's	
Number	Description
1	<b>Power adaptor:</b> DC jack
2	<b>Power Indicator:</b> Illuminated when 5V power is supplied from either the transmitter DVI connector or the 5V external power supply
3	<b>LC fiber optic connector</b>
4	<b>Data Indicator:</b> displays signal transmission status: <u>Transmitter status</u> - Green light indicates that a valid video signal has been received by the transmitter and the transmission laser is active. <u>Receiver status</u> - Orange light indicates that receiver is not detecting a transmitted signal. This may be caused by loss of power at the transmitter, or by an unplugged fiber cable
5	<b>EDID Programming Status Indicator</b> on transmitter unit, Display Connect LED on receiver unit <u>Transmitter EDID Status</u> - LED will flash orange when a display's EDID is being programmed into the Transmitter <u>Receiver Display LED</u> - green light indicates the receiver is connected to a display
6	<b>EDID button</b> (Transmitter) - Allows the user to manually program a display's EDID data into the transmitter's EEPROM. The button must be pressed and held down using a pin or paper clip

Table 1. DVI connectors and LED's

## DVI Connector - Pin Designations

Transmitter Unit		Receiver Unit	
Pin	Designation	Pin	Designation
1	T.M.D.S Data 2-	1	T.M.D.S Data 2-
2	T.M.D.S Data 2+	2	T.M.D.S Data 2+
3	T.M.D.S Data 2 Shield	3	T.M.D.S Data 2 Shield
6	DDC Clock	6	DDC Clock
7	DDC Data	7	DDC Data
8	No Connect	8	No Connect
9	T.M.D.S Data 1-	9	T.M.D.S Data 1-
10	T.M.D.S Data 1+	10	T.M.D.S Data 1+
11	T.M.D.S Data 1 Shield	11	T.M.D.S Data 1 Shield
14	+5V	14	+5V
15	Ground	15	Ground
16	Hot Plug Detect	16	Hot Plug Detect
17	T.M.D.S Data 0-	17	T.M.D.S Data 0-
18	T.M.D.S Data 0+	18	T.M.D.S Data 0+
19	T.M.D.S Data 0 Shield	19	T.M.D.S Data 0 Shield
22	T.M.D.S Clock Shield	22	T.M.D.S Clock Shield
23	T.M.D.S Data Clock+	23	T.M.D.S Data Clock+
24	T.M.D.S Data Clock-	24	T.M.D.S Data Clock-

Table 2. DVI Pin designations



Figure 5. DVI-D (male) connector pinout

# PRODUCT SAFETY

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## Safety

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The CrystalView DVI Micro LT, like all electronic equipment, should be used with care. To protect yourself from possible injury and to minimize the risk of damage to the Unit, read and follow these safety instructions.

- Follow all instructions and warnings marked on this Unit.
- Except where explained in this manual, do not attempt to service this Unit yourself.
- Do not use this Unit near water.
- Assure that the placement of this Unit is on a stable surface.
- Provide proper ventilation and air circulation.
- Keep connection cables clear of obstructions that might cause damage to them.
- Use only power cords, power adapter and connection cables designed for this Unit.
- Keep objects that might damage this Unit and liquids that may spill, clear from this Unit. Liquids and foreign objects might come in contact with voltage points that could create a risk of fire or electrical shock.
- Do not use liquid or aerosol cleaners to clean this Unit. Always unplug this Unit from the power source before cleaning.

Remove power from the unit and refer servicing to a qualified service center if any of the following conditions occur:

- The connection cables are damaged or frayed.
- The Unit has been exposed to any liquids.
- The Unit does not operate normally when all operating instructions have been followed.
- The Unit has been dropped or the case has been damaged.
- The Unit exhibits a distinct change in performance, indicating a need for service.

# SERVICE AND MAINTENANCE

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## Maintenance and Repair

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This Unit does not contain any internal user-serviceable parts. In the event a Unit needs repair or maintenance, you must first obtain a Return Authorization (RA) number from Rose Electronics or an authorized repair center. This Return Authorization number must appear on the outside of the shipping container.

See Limited Warranty for more information.

When returning a Unit, it should be double-packed in the original container or equivalent, insured and shipped to:

Rose Electronics

Attn: RA \_\_\_\_\_

10707 Stancliff Road

Houston, Texas 77099 USA

## Technical Support

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If you are experiencing problems, or need assistance installing your product, consult the appropriate section of this manual. If, however, you require additional information or assistance, please contact the Rose Electronics Technical Support Department at:

Phone: (281) 933-7673

E-mail: [TechSupport@rose.com](mailto:TechSupport@rose.com)

Web: [www.rose.com](http://www.rose.com)

Technical Support hours are from: 8:00 am to 6:00 pm CST (USA), Monday through Friday.

Please report any malfunctions in the operation of this Unit or any discrepancies in this manual to the Rose Electronics Technical Support Department.

# APPENDICES

## Appendix A — Specifications

Part Numbers	Description
CRK-T1DFXDM-DLT	CrystalView DVI Micro LT Fiber Extender
<b>Chassis Dimensions (W x D x H)</b>	
Transmitter and receiver chassis	1.53" x 2.12" x 0.57" (39 x 54 x 14.6 mm)
<b>Power Requirements</b>	
Power source	Transmitter unit is interface powered (from DVI circuit). Alternatively, use an external power supply if required. Receiver unit, one external 100-240VAC, AC input, +5V 1A
<b>Video Resolution</b>	
DVI-D Video	1600 x 1200@60Hz, 1920 x 1080@60Hz, 1920 x 1200@60Hz
Signal format	DVI
<b>Interconnect Cable Requirements</b>	
Fiber Cable	Multi-mode fiber, OM3, 50/125 $\mu$ m, bandwidth (1300nm:500MHz/km) Single-mode fiber (9/125 $\mu$ m, (G.652D)
<b>Cable Distances</b>	
Fiber Cable	Multi-mode to 1640ft (500m) Single-mode to 4920ft (1500m)
<b>Connectors</b>	
DVI Connector	Transmitter and receiver units: 1 x DVI-D (M)
<b>DDC Protocol</b>	
EDID	Self-EDID programming
<b>Environmental</b>	
Operating Temp	32°F to 122°F (0°C to 50°C)
Storage Temp	-4°F to 158°F (-20°C to 70°C)
Operating Humidity	0% to 80% relative, non-condensing

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**WWW.ROSE.COM** ▪ **sales@rose.com** ▪ **(800) 333-9343**

Rose Electronics ▪ 10707 Stancliff Road ▪ Houston, Texas 77099  
Rose USA (281) 933-7673 ▪ Rose Europe +49 (0) 2454 969442  
Rose Asia +65 6324 2322 ▪ Rose Australia +61 (0) 421 247083



**WWW.ROSE.COM**