

## INSTALLATION GUIDE FOR THE E-S5VDC

### INTRODUCTION

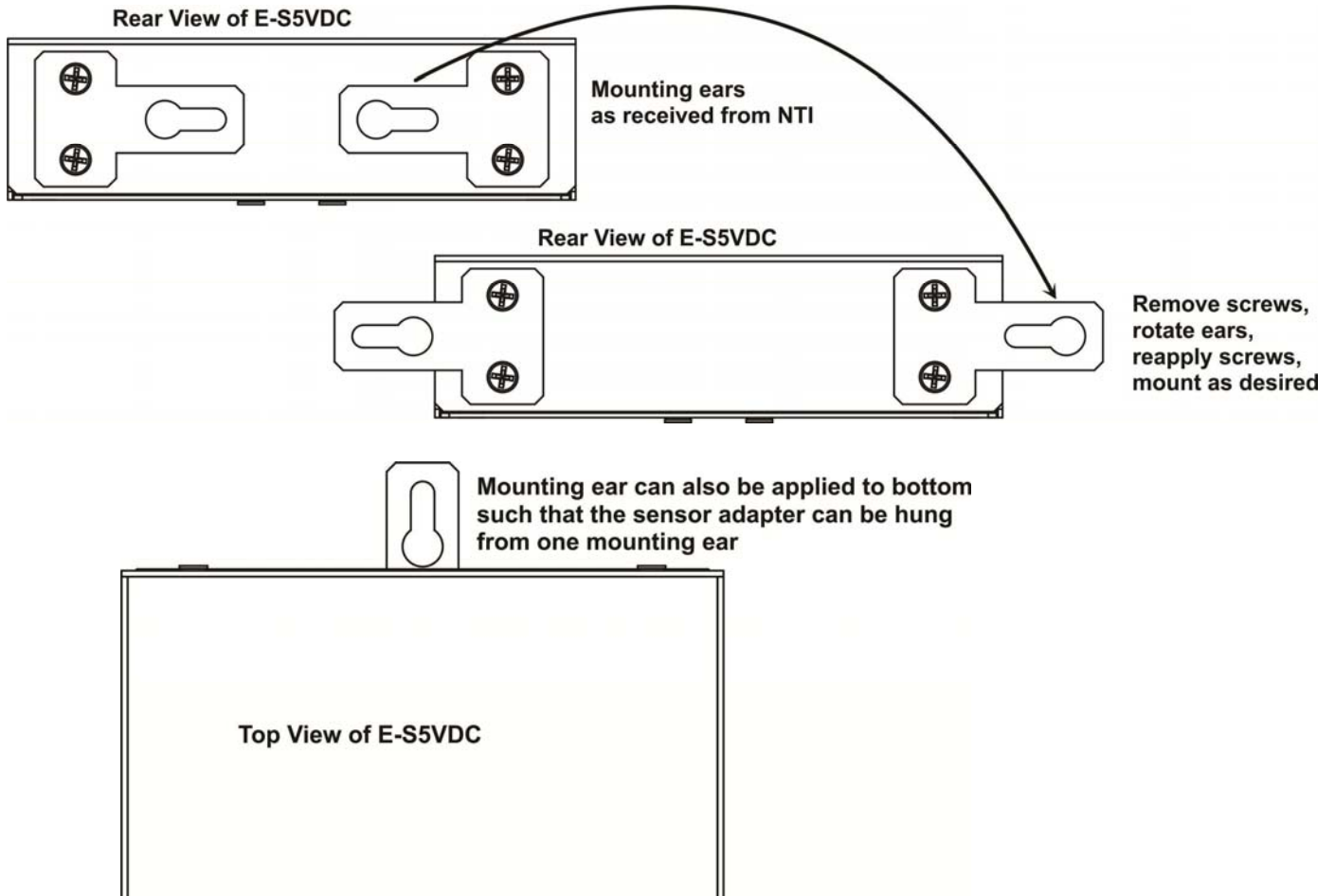
The NTI E-S5VDC Voltage Sensor Adapter monitors DC voltage sources (up to two) when connected to an E-16D/5D/2D Server Environment Monitoring System(SYSTEM). The voltage sources can be anything with a range between 0 to 5VDC. When connected to a SYSTEM via 18-24AWG CAT5/5e/6 cable (up to 1,000 feet away), the voltage source(s) can be monitored and the SYSTEM can be configured to alert users as to variations in the voltage levels.

### Features:

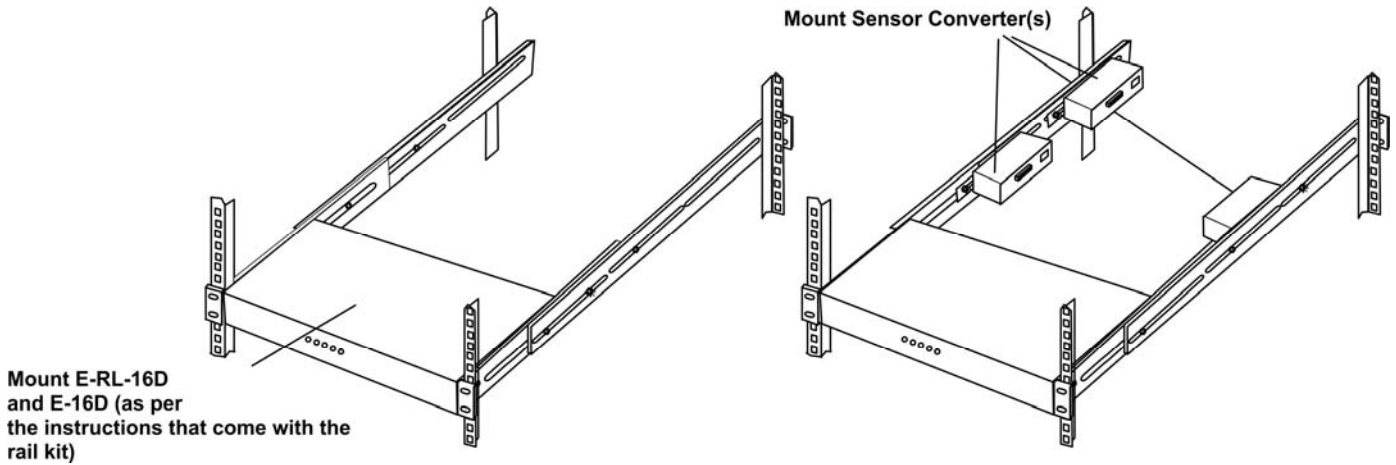
- Detects and monitors up to two DC voltages, each with a range of 0 to 5VDC
- E-S5VDC provides 12VDC, 25mA for each sensor
- 8-position screw-terminal connection
- Supports 18-24AWG CAT5/5e/6 cable up to 1,000 ft. (not included)
- Includes Mounting Ears
- CE certified
- RoHS compliant

### INSTALLATION

Mount the E-S5VDC using the mounting ears provided. To use the ears, remove the screws securing the ears to the rear of the E-S5VDC, turn the ears around, and reapply the screws. Alternatively, secure one ear to holes on the bottom of the unit so that it can be hung as shown in the image below.



To mount multiple Sensor Adapters in close proximity to the E-16D, install an extension rail kit (NTI E-RL-16D - sold separately) and mount Sensor Adapters as seen in the illustration below.

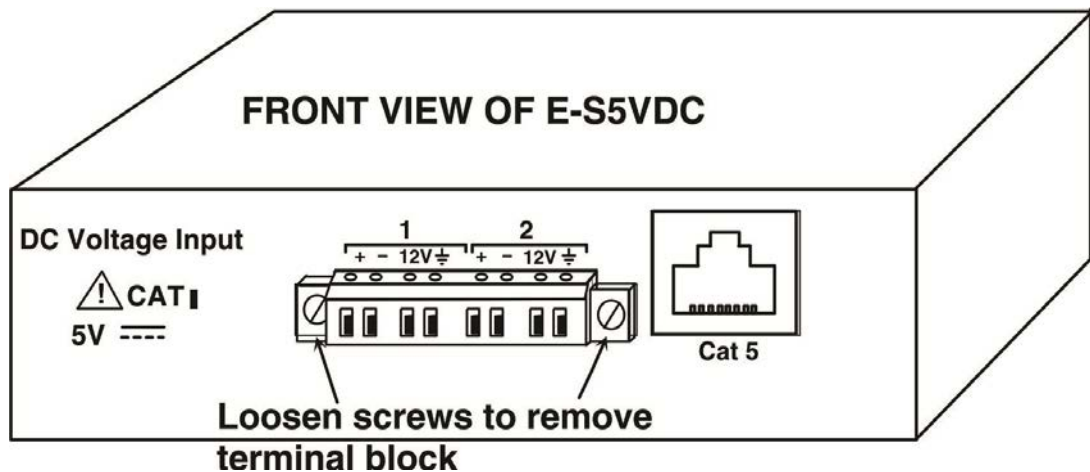


## CONNECTION

**Note: To prevent damage to the voltage source or the Sensor Adapter proper polarity must be observed when making connections.**

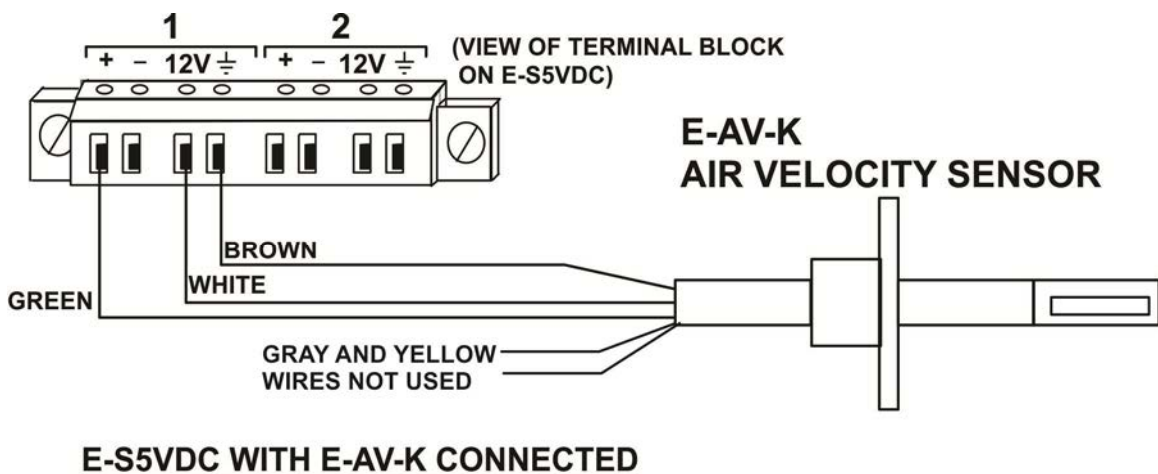
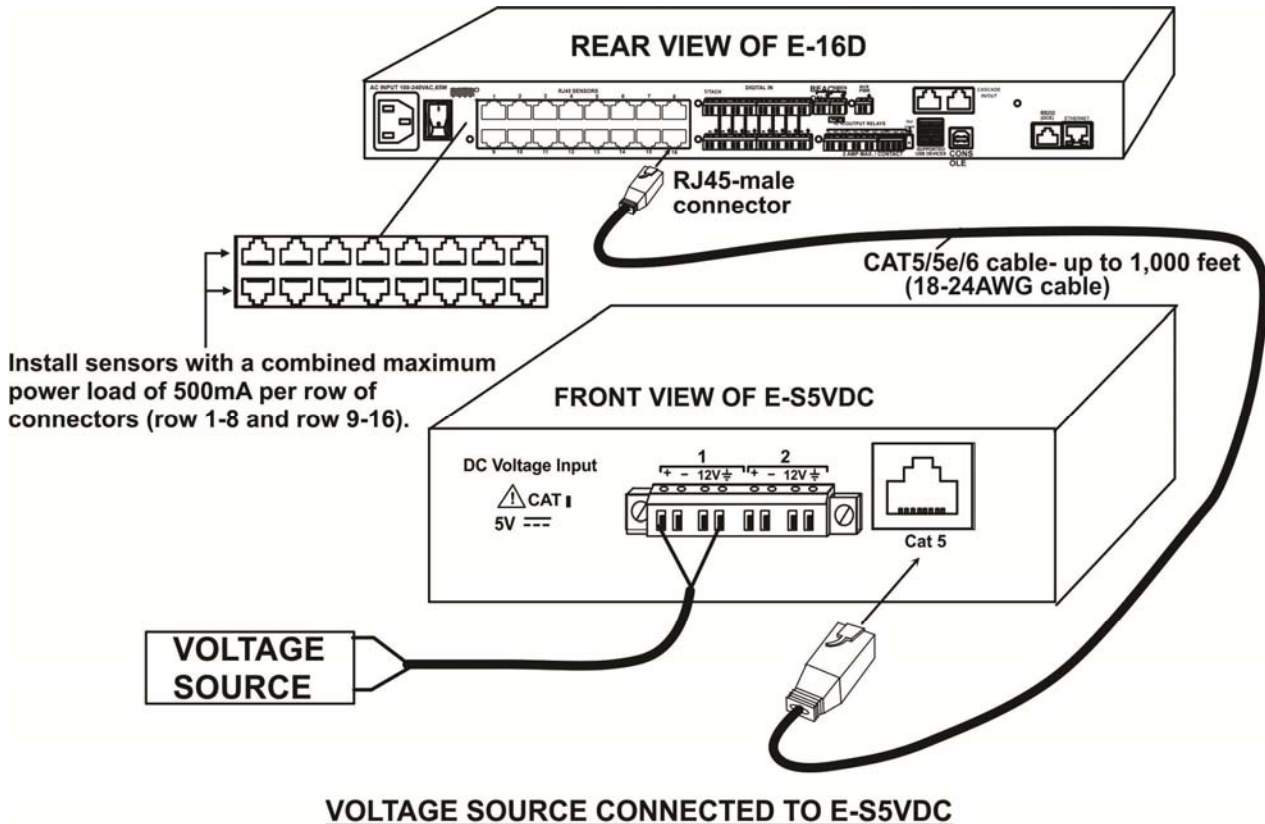
1. Connect a 0-5VDC voltage source to be monitored to the "+" and "⊥" (earth ground) connections of either input 1 or input 2 on the removable terminal block.
2. If the 0-5VDC voltage source is also a sensor (such as the E-AV) requiring external 12VDC power, then connect its power terminals to the "12V" and "⊥" (earth ground) on the removable terminal block.

**Note: The wire connection terminal block is easily removed from the Voltage Sensor Adapter for convenient wire termination.**



3. Connect a 18-24AWG CAT5/5e/6 patch cable (up to 1,000 feet long) between the “Cat 5” port on the Voltage Sensor Adapter and an “RJ45 Sensor” port on the SYSTEM. (The use of smaller gauge CATx cabling will result in shorter distances that can be spanned.)

**Note: Each row of RJ45 Sensor connectors (1-8 and 9-16) is rated for a combined load of 500mA. Each E-S5VDC uses 100mA. When applying sensors, be sure that the total load on each row does not exceed 500mA or failure of the SYSTEM or may result.**



4. Configure the SYSTEM to react to changes in the voltage from the source, as desired. See example on page 4.

## Server Rack Cooling Fan 1 Configuration (Type: Air Velocity)

<input type="checkbox"/> <b>Sensor Settings</b>	
<b>Description</b>	<input type="text" value="Server Rack Cooling Fan 1"/> Descriptive name for the sensor
<b>Min. Level</b>	<input type="text" value="0.0"/> Min. supported value for the sensor
<b>Max. Level</b>	<input type="text" value="5.0"/> Max. supported value for the sensor
<b>Associate Sensor</b>	<input checked="" type="checkbox"/> Associate sensor to a customized sensor type
<b>Associated Sensor Type</b>	<input type="text" value="Air Velocity"/> Type of the associated sensor
<b>Associated Sensor Unit</b>	<input type="text" value="Ft/ M"/> Measurement unit for the associated sensor
<b>SNMP Associated Type ID</b>	<input type="text" value="32767"/> ID value for SNMP type of associated sensor
<b>Min. Associated Level</b>	<input type="text" value="0.000000"/> Sensor expected value corresponding to 0V
<b>Max. Associated Level</b>	<input type="text" value="2000.000000"/> Sensor expected value corresponding to 5V
<b>Min. Non-Critical Threshold</b>	<input type="text" value="500.0"/> Min. threshold below which indicates a non-critical alert condition
<b>Max. Non-Critical Threshold</b>	<input type="text" value="2000.0"/> Max. threshold above which indicates a non-critical alert condition
<b>Min. Critical Threshold</b>	<input type="text" value="250.0"/> Min. threshold below which indicates an alert condition
<b>Max. Critical Threshold</b>	<input type="text" value="2000.0"/> Max. threshold above which indicates an alert condition
<b>Refresh Rate</b>	<input type="text" value="1"/> <input type="text" value="Sec"/> <input type="button" value="v"/> The refresh rate at which the sensor view is updated
<input type="checkbox"/> <b>Group Settings</b>	
<input type="checkbox"/> <b>Schedule Settings</b>	
<input type="checkbox"/> <b>Non-Critical Alert Settings</b>	
<input type="checkbox"/> <b>Critical Alert Settings</b>	
<input type="checkbox"/> <b>Data Logging</b>	
<input type="button" value="Save"/>	
<b>Alert Simulation</b>	
<input type="button" value="Simulate Alert"/> <input type="button" value="Clear Alert"/>	

**EXAMPLE OF SENSOR CONFIGURATION PAGE**

## TROUBLESHOOTING

Problem	Solution
Message "OUT OF RANGE" appears in sensor status page	<ul style="list-style-type: none"> <li>Measured voltage has exceeded the 0 to 5VDC limits</li> </ul>

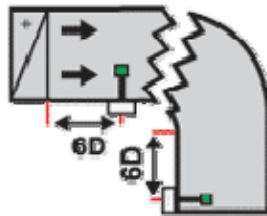
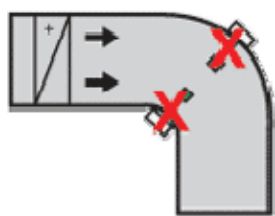
## TECHNICAL SPECIFICATIONS

Description	Specification
Measurement Range	0 to 5VDC
Accuracy	±1% of reading
Resolution	1.22mV
Input Impedance	20K ohms
Power	100mA @ 12V (Powered by the SYSTEM)
Size (In.) W x D x H	4.15 x 2.3 x 1.2

## INSTALLATION NOTE FOR E-AV-K AIR VELOCITY SENSOR

Correct positioning the E-AV-K Air Velocity Sensor is critical for reliable and accurate readings of air velocity in ducts. The Air Velocity sensor should be placed far enough from sources of air turbulence in the duct. The minimum distance the sensor should be placed from the source of turbulence is a function of the duct's diameter.

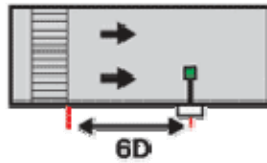
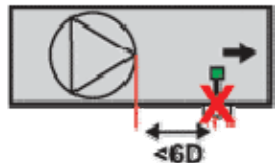
The equivalent diameter of a rectangular duct  $a \times b$  is  $D = \frac{2 \cdot a \cdot b}{a + b}$



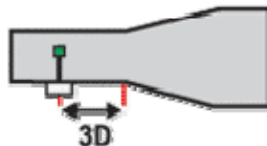
Place the sensor far enough away from bends, junctions, or section changes in the duct to ensure an accurate reading.



Install the sensor in the middle of the duct.



The preferred placement of the sensor is away from turbulent air caused by filters, rectifiers, and coolers.



Place the sensor in front of diffusers or confusers.



Filters and coolers calm the air flow.

**COPYRIGHT**

Copyright © 2009-2019 Network Technologies Inc. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written consent of Network Technologies Inc, 1275 Danner Drive, Aurora, OH 44202.

**CHANGES**

The material in this guide is for information only and is subject to change without notice. Network Technologies Inc reserves the right to make changes in the product design without reservation and without notification to its users.

**WARRANTY INFORMATION**

The warranty period on this product (parts and labor) is two (2) years from date of purchase. Please contact Network Technologies Inc at (800) 742-8324 or 330-562-7070 for information regarding repairs and/or returns. A return authorization number is required for all repairs/returns.

MAN113      Revised 4/18/2019