



PCMini52

Digital RH & Temperature Mini Probe

User's Manual



Inside front cover (blank)

Contents

Safety	v
Electrical Safety.....	v
Toxic Materials	v
Repair and Maintenance.....	v
Calibration	v
Safety Conformity.....	v
Abbreviations.....	vi
Recycling Policy.....	vi
WEEE And RoHS Compliance.....	vi
Warranty	vii
Return Policy.....	vii
1 INTRODUCTION.....	1
1.1 Features.....	1
1.2 Dimensions	1
2 INSTALLATION.....	2
2.1 Wall Mounting	2
2.2 Duct Mounting.....	2
3 CALIBRATION	3

Figures

<i>Figure 1.1</i>	<i>Dimensions</i>	<i>1</i>
<i>Figure 2.1</i>	<i>Wall Mount Position.....</i>	<i>2</i>
<i>Figure 2.2</i>	<i>Duct Mount Position.....</i>	<i>2</i>
<i>Figure 3.1</i>	<i>Cable Connections</i>	<i>3</i>

Appendices

Appendix A	Technical Specifications	5
Appendix B	List of Worldwide Michell Instruments' Offices.....	7

Safety

The manufacturer has designed this equipment to be safe when operated using the procedures detailed in this manual. The user must not use this equipment for any other purpose than that stated. Do not apply values greater than the maximum value stated.

This manual contains operating and safety instructions, which must be followed to ensure the safe operation and to maintain the equipment in a safe condition. The safety instructions are either warnings or cautions issued to protect the user and the equipment from injury or damage. Use competent personnel using good engineering practice for all procedures in this Manual.

Electrical Safety

The instrument is designed to be completely safe when used with options and accessories supplied by the manufacturer for use with the instrument.

Toxic Materials

The use of hazardous materials in the construction of this instrument has been minimized. During normal operation it is not possible for the user to come into contact with any hazardous substance which might be employed in the construction of the instrument. Care should, however, be exercised during maintenance and the disposal of certain parts.

Repair and Maintenance

The instrument must be maintained either by the manufacturer or an accredited service agent. Refer to Appendix B for details of Michell Instruments' worldwide offices contact information.

Calibration

Michell Instruments recommends an annual calibration for an accuracy requirement of $\pm 2\%$ RH under ambient conditions where temperature is 0 to $+50^{\circ}\text{C}$ ($+32$ to $+122^{\circ}\text{F}$) and relative humidity is 0 to 70% RH. For environments with airborne chemicals or for high humidity and high temperature conditions, Michell recommends more frequent calibration.

Safety Conformity

This product meets the essential protection requirements of the relevant EU directives. Further details of applied standards may be found in the product specification.

Abbreviations

The following abbreviations are used in this Manual:

AC	alternating current
°C	degrees Celsius
°F	degrees Fahrenheit
DC	direct current
g	Gram(s)
oz	ounce(s)
sec	second(s)
temp	temperature
V	Volts
"	inch(es)
∅	diameter
μ	micro

Recycling Policy



Michell Instruments is concerned with the protection of the environment. It is our commitment to reduce and eliminate from our operations, wherever possible, the use of substances which may be harmful to the environment. Similarly, we are increasingly using recyclable and/or recycled material in our business and products wherever it is practical to do so.

The product that you have purchased may contain recyclable and/or recycled parts and we will be happy to provide you with information on these components if required.

WEEE And RoHS Compliance

The Waste Electronic and Electrical Equipment (WEEE) Directive, and the Restriction of Hazardous Substances (RoHS) Directive place rules upon European manufacturers of electrical and electronic equipment. The directive's aim is to reduce the impact that electronic devices have on the environment.

Michell products are currently exempt from the RoHS directive, however all future products will be developed entirely using compliant materials. Furthermore, Michell is taking active steps to remove non-compliant materials and components from existing products wherever possible.

Michell is in full compliance with the WEEE Directive (Registration No. WEE/JB0235YW). Customers may be required to return certain instruments for treatment at the end of their working life.

June 2010

Warranty

Unless otherwise agreed, the Supplier warrants that, as from the date of delivery for a period of 12 months, the goods and all their component parts, where applicable, are free from any defects in design, workmanship, construction or materials.

The Supplier warrants that the services undertaken shall be performed using reasonable skill and care, and of a quality conforming to generally accepted industry standards and practices.

Except as expressly stated all warranties, whether express or implied, by operation of law or otherwise, are hereby excluded in relation to the goods and services to be provided by the Supplier.

All warranty services are provided on a return to base basis. Any transportation costs for the return of a warranty claim shall reside with the Customer.

Return Policy

If a Michell Instruments' product malfunctions within the warranty period, the following procedure must be completed:

1. Notify a Michell Instruments' representative, giving full details of the problem, the model variant and the serial number of the product.
2. If the nature of the problem indicates the need for factory service then the instrument should be returned to Michell Instruments, carriage prepaid, preferably in the original packaging, **with a full description of the fault and the customer contact information.**
3. Upon receipt, Michell Instruments will evaluate the product to determine the cause of the malfunction. Then, one of the following courses of action will be taken:
 - If the fault is covered under the terms of the warranty, the instrument will be repaired at no cost to the owner and returned.
 - If Michell Instruments determines that the fault is not covered under the terms of the warranty, or if the warranty has expired, an estimate for the cost of the repairs, at standard rates, will be provided. Upon receipt of the owner's approval to proceed, the product will be repaired and returned.

1 INTRODUCTION

The micro-processor control and multi-point calibration give the PCMini52 RH probe excellent performance in terms of accuracy and linearity. The mini probe can provide two linear analog outputs for temperature and relative humidity, dew point, absolute humidity or wet bulb temperature.

1.1 Features

- Output can be % RH, calculated absolute humidity, dew point or wet bulb temperature + temperature
- Excellent linearity, (μ P) micro-processor temperature compensated
- Low power consumption, fast settling time
- Small size: L = 80mm, \varnothing 12mm (3.15", \varnothing 0.47")

1.2 Dimensions

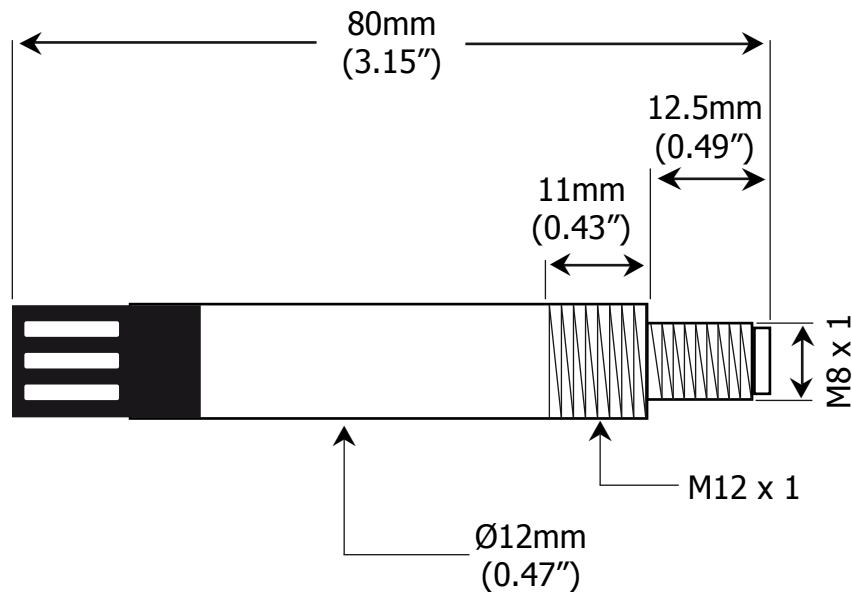


Figure 1.1 Dimensions

2 INSTALLATION

2.1 Wall Mounting

The PCMini52 can be used for wall mounting and must always be installed with the sensing element facing downwards so as to minimize the propagation of heat between the transmitter and the sensitive element. It should be attached to the wall with a mounting clip.

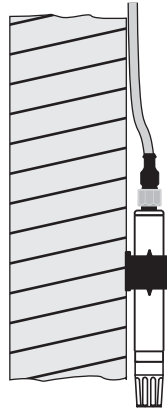


Figure 2.1 Wall Mount Position

2.2 Duct Mounting

The PCMini52 can be used for duct mounting and must be installed so that the end of the sensor body (the filter) comes into contact, perpendicularly, with the flow of air from which the relative humidity is to be measured.

An extra opening should be made in the air duct close to the opening for the installation of the sensor in order that checks and further calibration may be performed, when required.

If necessary, an appropriate form of thermal insulation should be placed between the walls of the duct and the transmitter housing.

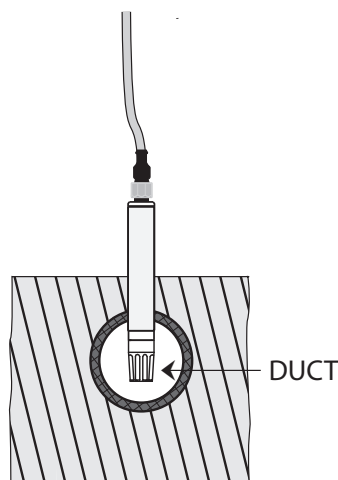


Figure 2.2 Duct Mount Position

3 CALIBRATION

The transmitter is calibrated at two points.

Cable color	
Brown	Supply voltage V +
White	Output RH, Dew Point or Absolute Humidity
Black	Output temperature
Blue	Common ground

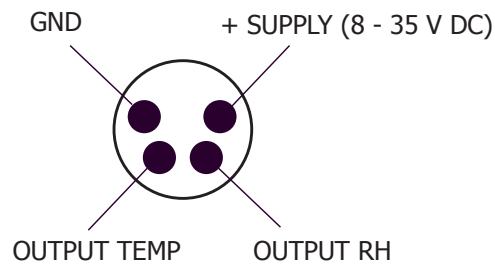


Figure 3.1 Cable Connections

Appendix A

Technical Specifications

Appendix A Technical Specifications

Performance	
Measurement range (RH)	0–100% RH
Measurement range (T)	-20 to +80°C (-4 to +176°F)
Accuracy at 23°C (73°F) Humidity	<±2% RH (10–90% RH)
Accuracy at 23°C (73°F) Temperature	±0.2°C (±0.36°F)
Stability – RH Sensor	±1% RH/year
Response time – RH Sensor	<10 sec typical (for 90% of the step change)
Electrical output/input	
Output signal options	0–1, 0–5, 0–10 V
Supply voltage	14–35 V DC (for 0–5 / 10 V output) 4.5–35 V DC (for 0–1 V output) or 14–26 V AC (for all output ranges)
Operating conditions	
Operating temperature Sensing element	-30 to +85°C (-22 to +185°F)
Housing	-30 to +85°C (-22 to +185°F)
Storage	-40 to +85°C (-40 to +185°F)
Mechanical specification	
Ingress protection	IP65 (NEMA 4 level)
Housing material	Molded polymer or stainless steel (ordering option)
Dimensions	L=80mm, ø12mm (L=3.15", ø0.47")
Weight	10g (0.35oz)
Electrical connections	4 pin, M8 connector

Appendix B

List of Worldwide Michell Instruments' Offices

Appendix B List of Worldwide Michell Instruments' Offices

<p>Asia Michell Asia PO Box 3149 Joondalup WA 6027 Australia Tel: +61 893 046587 E-mail: au.info@michell.com Web: www.michell.com/au</p>	<p>Benelux Michell Instruments Benelux BV Krombraak 11 4906 CR Oosterhout The Netherlands Tel: +31 162 680 471 Fax: +31 162 437 566 E-mail: nl.info@michell.com Web: www.michell.com/nl</p>
<p>China Michell Instruments (Shanghai) Ltd Room 1007, Qilai Building 889 Yishan Road Shanghai, 200233 P R China Tel: +86 21 5401 2255 Fax: +86 21 5401 2085 E-mail: cn.info@michell.com Web: www.michell.com/cn</p>	<p>France Michell Instruments SAS 2-4, rue Jean Desparmet 69008 Lyon France Tel: +33 437 53 88 20 Fax: +33 437 53 88 21 E-mail: fr.info@michell.com Web: www.michell.com/fr</p>
<p>Germany, Austria, Switzerland Michell Instruments GmbH Industriestrasse 27 D-61381 Friedrichsdorf Germany Tel: +49 6172 591700 Fax: +49 6172 591799 E-mail: de.info@michell.com Web: www.michell.com/de</p>	<p>Italy Michell Italia Srl Via Capecelatro, 10 20148 Milano Italy Tel: +39 02 4047194 Fax: + 39 02 40010565 E-mail: it.info@michell.com Web: www.michell.com/it</p>
<p>Japan Michell Japan KK Musashino Center Building 1-19-18 Nakacho, Musashino Tokyo 180-0006 Japan Tel: +81 422 502600 Fax: +81 422 521700 E-mail: info@michell-japan.co.jp Web: www.michell-japan.co.jp</p>	<p>Middle East Michell Instruments Middle East P-06, #097 Sharjah Airport Int'l free zone Sharjah, United Arab Emirates Tel: +971 6 5575028 Fax: +971 6 5575029 E-mail: me.info@michell.com</p>
<p>North America Michell Instruments Inc 319 Newburyport Turnpike, Suite 207 Rowley, MA 01969 USA Tel: +01 978 484 0005 Fax: +01 978 843 7669 E-mail: us.info@michell.com Web: www.michell.com/us</p>	<p>United Kingdom Michell Instruments Ltd 48 Lancaster Way Business Park Ely, CB6 3NW Cambridgeshire England Tel: +44 1353 658000 Fax: +44 1353 658199 E-mail: info@michell.com Web: www.michell.com/uk</p>

NOTES:



<http://www.michell.com>