KMC CONTROLS
In touch.

# Digital Sensors and Accessories Catalog Supplement

# Important Navigation Tips!

In this catalog, the following items have **blue hyperlinks** to their referred pages (click on a hyperlink to go to that page):

- **Contents** (lines)—the table of contents lists products alphabetically by application.
- **Index** (page numbers)—all cataloged KMC Controls model/part numbers as well as various topics are listed alphabetically.
- **Cross-references** (bold italicized blue text) to other pages in this document (See and See Also).
- **Hyperlinked references** (bold blue text) to KMC Controls web pages.

**Bookmarks** (another form of hyperlinks) in the left panel of the screen also offer easy navigation to the relevant sections:

- Clicking on the **+** will reveal/expand hidden subtopics.
- Clicking on the **–** will collapse subtopics.
- If bookmarks are not visible, select View > Navigation Panels > Bookmarks.

**Search** (Ctrl key + F if the search field is not visible) can find all appearances of entered text.

# Contents


Introduction ..... 5

About this Catalog ..... 5
Products in this Catalog ..... 5
About KMC Controls ..... 6
Web Site and Publications ..... 6

Brochures and Reference Materials ..... 7

General Information ..... 7
BACnet Products ..... 7
KMDigital Products ..... 8

Digital Sensors and Interfaces ..... 9

NetSensors (Sensors and Operator Interfaces) ..... 9
NetSensor Selection Guide ..... 9
KMD-1101/1104/1121/1124/1154/1174 NetSensors Replacement Cross-Reference ..... 11
KMD-1151/1171 NetSensors (LED) ..... 11
KMD-1161/1164/1181/1184 NetSensors (General, Networked) ..... 12
KMD-1162 Hospitality NetSensor (FCU) ..... 12
KMD-1183/1185 NetSensors (Stand-Alone or Small Network) ..... 13
KMD-1261/1281 NetSensors (Motion Sensing) ..... 13
NetView (Operator Interface) ..... 14
KMD-1002 NetView ..... 14
KMD-7311/7312 Attain Cross-Reference ..... 14
Wireless Sensors ..... 15
STW-6000 and THW-1100 series Wireless Temperature and Humidity Sensors ..... 15

Accessories ..... 16

Adapters and Cables ..... 16

KMD-5600 Series Cables ..... 16

KMD-5620 Series Adapters ..... 16

Hardware, Miscellaneous ..... 17

Ferrite Core ..... 17

Jumper (Power, EOL, and Output Override) ..... 17

Reducer Bushing and Non-Rotational Bracket ..... 17

Resistor (249 Ohm) Pack ..... 17

Snap Track ..... 17

SSS-1000 Series Differential Pressure Flow Sensors ..... 17

Interfaces and Converters ..... 18

HPO-670x Series Output Override Boards ..... 18

HTO-1101/1102/1103 Firmware Upgrade Kits (and $CO_2$ Gas Tubing Adapter) ..... 18

KMD-5540 Series CommTalk Protocol Interfaces ..... 19

KMD-5550/5556 Modem Interfaces ..... 20

KMD-5557 Computer Interface (EIA-485 to EIA-232 Converter) ..... 20

KMD-5559 Series CommTalk Communications Interfaces ..... 21

KMD-5569 56K Faxmodem ..... 22

KMD-5576 USB to EIA-485 Communicator ..... 22

NetSensor Accessories ..... 23

Power and Protective Devices ..... 24

Power Supplies and Transformers ..... 24

Fuse and Fuse Bulb ..... 24

HPO-0070/0071 Input/Output Transient Suppressor Boards ..... 25

KMD-5567 Network Surge Suppressor Module ..... 25

KMD-5575 Repeater-Isolator ..... 25

Input, Output, and Other Devices ..... 26

Index ..... 27

# Introduction

## About this Catalog

This SP-090 Digital Sensors and Accessories Catalog Supplement supplements the information in the much larger **SP-071 KMC Controls Catalog (with Electronic and Pneumatic Controls)**. See that catalog for information about KMC terms, conditions of sale, warranty, and returns. That catalog also contains various input and output devices for the digital controllers. Our analog electronic line includes actuators, relays, sensors, switches, thermostats, transducers, transformers, transmitters, valves, and accessories that are used with, not only our older analog electronic controllers, but also the latest digital controllers.

**For even more details about KMC products, see the product data sheets** on the KMC Controls web site.

For more information about:

- **BACnet products**, see the BACnet Catalog Supplement (SP-092).
- **FlexStat selection and accessories**, see the FlexStat Catalog Supplement and Selection Guide (SP-091)
- **KMDigital products**, see the KMDigital Catalog Supplement (SP-093)

These files are available as Acrobat PDF downloads from the KMC web site.

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## Products in this Catalog

Still . . . Made in the U.S.A.

We manufacture exclusively within the United States of America. This includes our pneumatic, analog electronic, and DDC (direct digital control) products and related software with the exception of those listed on our web site. The vast majority of our manufacturing takes place at our corporate headquarters in Indiana. Some pneumatic products are assembled in Virginia from components produced in Indiana. (See more on **http://www.kmccontrols.com/products/ARRAFunding.aspx**.)

Our manufacturing includes circuit board assembly, injection molding of components and cases, and electronic assembly, mechanical assembly, and final product assembly. A 5-minute video, available on the KMC web site (**http://www.kmccontrols.com/default.aspx?id=american**), provides some visual insight into some aspects of our production processes.

As a convenience tour customers, KMC Controls supplies some products on a "pass-through" arrangement from other manufacturers. We cannot claim Buy American conformance or non-conformance for such catalog products.

Although every effort is made to make the information in this catalog accurate, not all models listed may be available. KMC reserves the right to discontinue models at any time or change specifications or designs without notice and without incurring obligation. KMC further reserves the right to substitute a similar device for a device not in stock or no longer sold by the company.

# About KMC Controls

KMC Controls (formerly Kreuter Manufacturing Company) has been designing and manufacturing building automation solutions, HVAC control products, and energy management solutions since 1969. KMC remains the only privately held US controls manufacturer with a full line of digital, electronic, and pneumatic products.

KMC is dedicated to developing and maintaining controlled processes to competitively service our world-wide customer base, with building control products that meet government regulations, international standards, and customers requirements. KMC has an ISO 9001:2008 registered quality system in place. We meet the highest quality standards and can still quickly make changes dictated by the needs of the market. Our quality and quick response have led to reliable production of a complete line of pneumatic, analog electronic, and digital controls.

KMC maintains regional sales offices throughout the U.S. and distributes its solutions and products through value-added, authorized installing contractors, wholesalers, and OEMs throughout North America as well as authorized distributors worldwide.

KMC's intellectual property includes dozens of patents, but even the very best widgets would be worthless without proper support. Our customer service representatives excel at establishing personal relationships with their assigned customers. They know our product lines, have real-time inventory information at their fingertips, and can advise on product cross-reference information as well as all shipping options. The responsiveness of our team is unsurpassed, and they are available via toll-free telephone/fax and email.

For technical support, authorized installing contractors have unlimited free access to our knowledgeable team of technical xupport representatives from 8 AM to 8 PM (Eastern Standard Time) every business day. Our representatives are experienced in field operations, are fully trained in KMC product lines, have a wealth of product and system information available to them, and have ready access to design and software engineers as needed.

Multiple ways of communicating with the company are:

**Address (Mailing/Shipping)**

**KMC Controls**
**19476 Industrial Drive**
**New Paris, Indiana 46553, U.S.A.**

**Toll-free Sales**

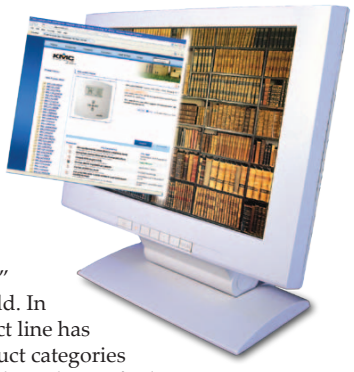
| | |
|---|---|
| **Telephone** | **866.302.4KMC (4562)** |
| **FAX** | **800.276.5555** |

**Internet**

**kmccontrols.com**
**facebook.com/KMCControls**
**linkedin.com/company/kmc-controls**
**twitter.com/kmccontrols**
**youtube.com/kmccontrols**
**info@kmccontrols.com**

# Web Site and Publications

The purpose of the award-winning **www.kmccontrols.com** is to support our valued customers and partners in KMC-related endeavors. The web site is divided into two parts, a public site and a partner site.



To get the most information and functionality, access the partner site using your user name and password. (Your log-in determines what information is available to you.) The "My Account" page lets you access a variety of personal services.

Most product information is available through the "Products" button or the Product Search field. In the Products section, our product line has been organized into major product categories and subcategories. Follow these branches to find specific products. You may also enter model numbers or key words into the search box for immediate access to the specific product you seek. While the public can view basic product information, product pricing and other associated information requires a registered user name and password.

The "Downloads" button offers access to numerous files that are organized into different categories. You can also download groups of files by checking the boxes next to them.

Besides product data, you can also find information about KMC as a company, contacts, training, sales tools, upcoming events, press releases, and other information.

We are constantly striving to improve the quality of the information we provide. This quest for quality is reflected in the web site and a number of our publications having **won many awards for publication excellence in recent years**.

SEE ALSO: The interactive ***KMC Desktop*** in the Products section of the ***KMC partner web site*** for quick and easy downloading of brochures, data sheets, installation guides, and other information.

# Brochures and Reference Materials

## General Information

SB-057 KMC Sensors Brochure

SB-056 KMD-1261/1281 NetSensors Brochure

SB-047 TotalControl Brochure

= Award Winner

= New or Updated in 2010–2012

SP-022 Digital Designer's Guide*

SP-071 Catalog (Electronic and Pneumatic Controls)*

SEE ALSO: For more general, pneumatic, and electronic product promotional products, see the SP-071 KMC Controls Catalog (with Electronic and Pneumatic Controls).

SEE ALSO: BACnet Catalog Supplement (SP-092) and KMDigital Catalog Supplement (SP-093) are available on the KMC web site as downloadable PDFs (only).

*NOTE: Brochures have "SB-" part number prefixes. Catalogs and the Digital Designer's Guide have *SP* numbers, not *SB*.

## BACnet Products

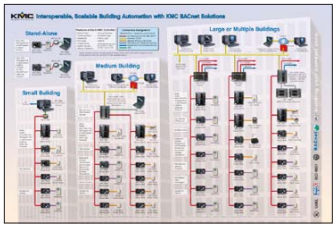
SP-091 FlexStat Catalog Supplement and Selection Guide

SB-049 FlexStat Brochure

SB-002 BAC-5050 FullBAC Router Brochure

SB-003 BAC-5801/5802 AAC Brochure

SB-005 BAC-7000 Series AAC VAV Brochure

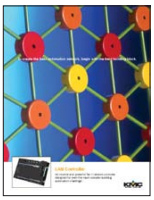


SB-045 Interoperable, Scalable Building Automation with KMC BACnet Solutions POSTER

SB-008 Native BACnet Building Automation Solutions BROCHURE**

**NOTE: The 8-page **SB-008** brochure provides an overview of all BACnet products. It replaced the earlier SB-044 BACnet BAS brochure. It also **replaces the other, older, product-specific brochures that are being phased out as their inventory runs out.**

# KMDigital Products



**SB-012 KMD-5210 LAN Controller Brochure**

**SB-013 KMD-5801/5802 Controllers Brochure**

**SB-015 KMD-5831 Controller Brochure**

**SB-017 KMD-7000 Series VAV Controllers-Actuators Brochure**

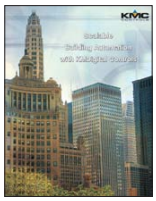
**SB-018 KMD-7x00 Series Controllers Brochure**

**SB-025 KMD-5791 WinControl XL Plus Software Brochure**

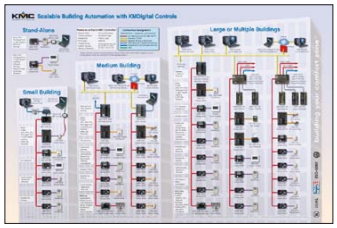
**SB-026 KMD-5270 WebLite Controller Brochure**

**SB-027 KMD-5205 LANLite Controller Brochure**

**SB-032 KMD-5210-001 LAN Controller with BACnet Interface Brochure**



**SB-042 Scalable Building Automation with KMDigital Controls BROCHURE**



**SB-043 Scalable Building Automation with KMDigital Controls POSTER**

NOTE: These documents may be downloaded from the KMC web site in Adobe Acrobat PDF format. For more general and electronic product promotional products, see the **SP-071 KMC Controls Catalog (with Electronic and Pneumatic Controls)**. For more detailed product information, see the individual data sheets.

# Digital Sensors and Interfaces

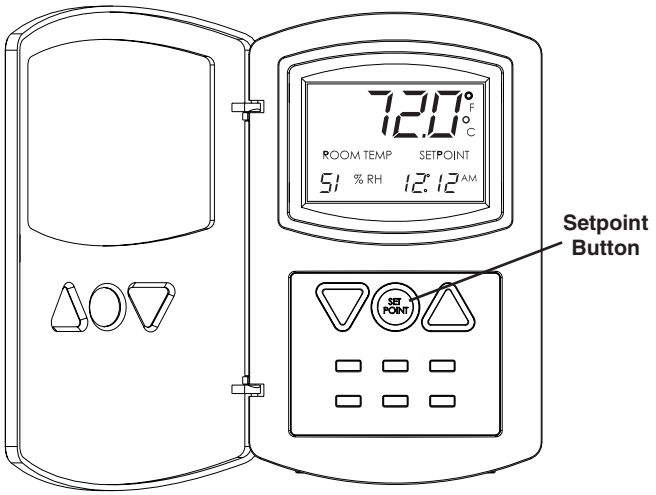
## NetSensors (Sensors and Operator Interfaces)

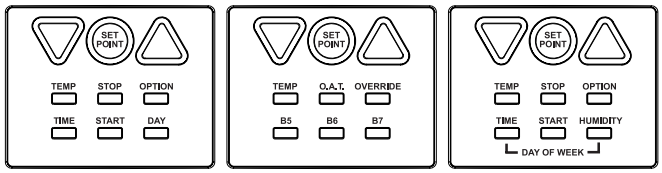
| NetSensor Selection Guide | | | | |
|---|---|---|---|---|
| **Model** | **Display Type & Protocol** | **Optional Sensors** | **Buttons/Dials/Switches** | **Comments and Features** |
| *KMD-1101* | LED (KMD only) | *None* | *6 buttons visible, 3 under cover* | *Discontinued, for replacement information, see* ***KMD-1101/1104/1121/1124/1154/1174 NetSensors Replacement Cross-Reference on page 11*** |
| *KMD-1121* | | *Humidity* | | |
| *KMD-1104* | | *None* | *Rotary setpoint dial, EasyView* | |
| *KMD-1124* | | *Humidity* | | |
| KMD-1151 | | None | 6 buttons visible, 3 under cover | KMDigital only, replaceable button labels |
| *KMD-1154* | | | *Rotary setpoint dial, EasyView* | *Discontinued, for replacement information, see* ***KMD-1101/1104/1121/1124/1154/1174 NetSensors Replacement Cross-Reference on page 11*** |
| KMD-1171 | | Humidity | 6 buttons visible, 3 under cover | KMDigital only, replaceable button labels |
| *KMD-1174* | | | *Rotary setpoint dial, EasyView* | *Discontinued, for replacement information, see* ***KMD-1101/1104/1121/1124/1154/1174 NetSensors Replacement Cross-Reference on page 11*** |
| KMD-1161 | LCD (BACnet or KMD) | None | 3 buttons visible, 6 under cover* | Round **Setpoint** button |
| KMD-1162 | | | 2 push buttons, 2 slide switches* | Hospitality (Heat-Off-Cool & High-Med-Low), 2-character display |
| KMD-1164 | | | 3 buttons visible, 6 under cover* | Round **Setpoint** button |
| KMD-1181 | | Humidity | | Round **Setpoint** button |
| KMD-1183 | | | | Round **Mode** button, Alarm button displays "ON/OFF"* |
| KMD-1184 | | | | Round **Setpoint** button |
| KMD-1185 | | | | Round **Mode** button, Alarm button displays "ALM/OFF"* |
| KMD-1261 | | Motion | 2 buttons visible, 6 under cover, and motion sensor* | Round Setpoint button replaced by motion sensor; Up/Down arrows take over its function |
| KMD-1281 | | Motion & Humidity | | |
| *See illustrations and information on the next page. | | | | |

NOTE: **KMD-115x/117x (KMDigital only)** NetSensors connect to KMD-58xx and KMD-70xx series controllers via cables with modular plugs.

NOTE: KMD-116x/118x/12x1 NetSensors connect to (BACnet or KMDigital) BAC/KMD-58xx and BAC/KMD-70xx series controllers via cables with modular plugs.

**KMD-1161/1164/1181/1184**



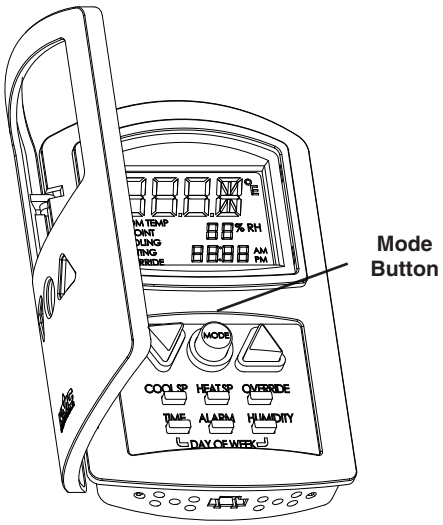

KMD-1164 KMD-1161/1181 KMD-1184

NOTE: The general-purpose KMD-1161/1164/1181/1184/1261/1281 NetSensors are most often used with controllers in **networked** VAV applications. The KMD-1183/1185 NetSensors are most often used with controllers in **stand-alone** (non-networked) systems.

NOTE: Humidity is shown only in KMD-1x8x models.

SEE: *KMD-1161/1164/1181/1184 NetSensors (General, Networked) on page 12.*

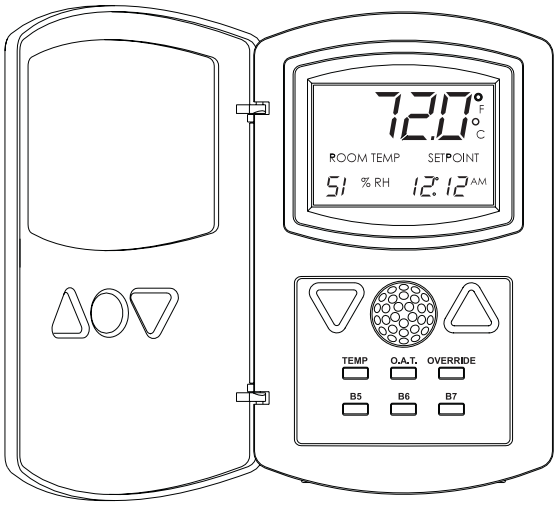
**KMD-1183/1185**




| State | KMD-1183 | KMD-1185 |
|---|---|---|
| Alarm | Display shows room temperature. When Button 6 (ALARM) is pressed, "**ON**" is momentarily displayed. | Display shows flashing "**ALM**" (alternates with room temperature display). Pressing Button 6 suppresses "ALM" indication for 10 minutes, and if Button 6 is pressed again during the 10 minute suppression period, "ALM" shows momentarily. When "ALM" is flashing, if any button other than 6 is pressed, the display momentarily returns to the normal display corresponding to that button. |
| No Alarm | Display shows room temperature. When Button 6 is pressed, "**OFF**" is momentarily displayed. | |

SEE: *KMD-1183/1185 NetSensors (Stand-Alone or Small Network) on page 13.*

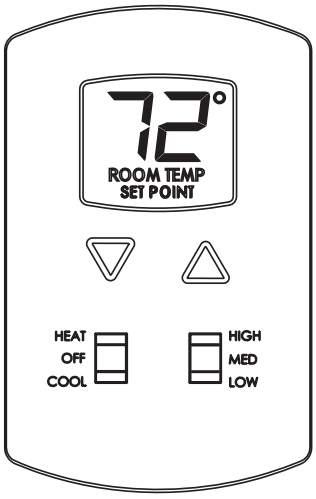
**KMD-1261/1281**




NOTE: Motion sensor replaces Setpoint/Mode button. Humidity is shown only in KMD-1281.

SEE: *KMD-1261/1281 NetSensors (Motion Sensing) on page 13.*

**KMD-1162**




NOTE: FCU hospitality applications with slide switches rather than push buttons under cover. No swing-open cover.

SEE: *KMD-1162 Hospitality NetSensor (FCU) on page 12.*

## KMD-1101/1104/1121/1124/1154/1174 NetSensors Replacement Cross-Reference

| Discontinued Model | Replacement Model |
|---|---|
| KMD-1101* | KMD-1151 |
| KMD-1121* | KMD-1171 |
| KMD-1104* | KMD-1151/1161/1164** |
| KMD-1124* | KMD-1171/1181/1184** |
| KMD-1154 | KMD-1151/1161/1164** |
| KMD-1174 | KMD-1171/1181/1184** |

SEE ALSO: The *NetSensor Selection Guide on page 9*.

*NOTE: KMD-1101/1104/1121/1124 NetSensors are compatible only with the discontinued KMD-6000 controllers. For new installations, see the corresponding upgraded model shown in the chart at the right. If the NetSensor in an existing installation must be replaced with a newer model, the KMD-6000 controller must also be replaced.

**NOTE: KMD-1104/1124/1154/1174 NetSensors with rotary dials do not have direct replacements. Current NetSensors have a button interface, and the controller will require some reprogramming.

SEE ALSO: The KMD-6xxx Controller Replacement Cross-Reference section in the KMDigital Catalog Supplement (SP-093).

---

## KMD-1151/1171 NetSensors (LED)

*(KMDigital Only)*

These NetSensors are wall-mounted, temperature-sensing, programmable, operator interfaces for use in a KMC KMDigital direct digital controls system. The simplicity of this design combined with its programmable functions allows for a wide variation of key assignments. They provide the following user features:

- Bright, four-character LED display with programmable on/off times for easy viewing.
- The NetSensor includes nine buttons, seven of which are user programmable, in a simple and functional design. Auxiliary wire leads provide connection for an additional digital input.
- Four-pin EIA-485 (formerly RS-485) data port on the side for easy temporary computer connection to the controller.

### Main Features

- Large, 4-character, 7-segment, red LED
- Nine buttons total (seven of which are user programmable), three behind flip-open cover
- Powered by connected controller
- Compatible with KMD-5800 and KMD-7000 series controllers
- Light almond plastic
- Temperature only or temperature and humidity sensing
- Four-pin EIA-485 data port for easy temporary computer connection to the controller
- SASO PCP Registration KSA R-103260

NOTE: KMD-1151/1171s connect to KMD-5800 and KMD-7000 series controllers. They are **not** compatible with discontinued KMD-6000 series controllers as well as any KMC BACnet controllers.

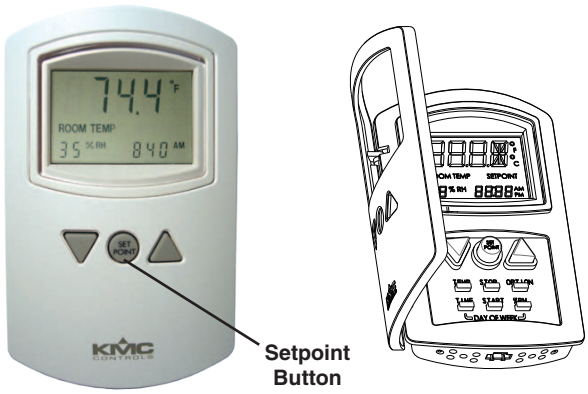
### Models

| | |
|---|---|
| KMD-1151 | Temperature Only |
| KMD-1171 | Temperature and Humidity |

SEE ALSO: **KMD-1151** and **KMD-1171** series web pages for details.

SEE ALSO: *NetSensor Accessories on page 23* and *NetSensor Selection Guide on page 9*.

## KMD-1161/1164/1181/1184
## NetSensors (General, Networked)




These NetSensors are wall-mounted, temperature-sensing, programmable operator interfaces for use in a KMC direct digital controls system. The NetSensor allows easy, direct communication with the connected controller via a local access port.

The NetSensor includes nine function keys, seven of which are programmable. The simple and functional design combined with its programmable functions allows for a wide variety of key assignments.

SEE ALSO: **KMD-1161/1164** and **KMD-1181/1184** series web pages for details.

### Main Features

- Large, four-character LCD display for easy temperature viewing, plus smaller characters for time and (if applicable) relative humidity
- Setpoint and up/down arrow buttons accessible through cover; six additional function buttons behind the flip-open cover
- Seven buttons may be programmed with the controller to display or control the state of any point in the attached controller
- Four-pin EIA-485 (formerly RS-485) data port on the underside for easy temporary computer connection to the controller
- SASO PCP Registration KSA R-103260

### Models

**Temperature Only**

| | |
|---|---|
| KMD-1161 | Almond |
| KMD-1161W | White |
| KMD-1164 | Almond |
| KMD-1164W | White |

**Temperature and Humidity**

| | |
|---|---|
| KMD-1181 | Almond |
| KMD-1181W | White |
| KMD-1184 | Almond |

SEE ALSO: *NetSensor Accessories on page 23* and *NetSensor Selection Guide on page 9*.

## KMD-1162
## Hospitality NetSensor (FCU)

This is a wall-mounted, temperature-sensing, programmable operator interface for use with a fan coil unit controlled by a KMC direct digital controls system. It includes intuitive-to-use setpoint buttons, and two **slide switches for heating/cooling change over and fan speed**. (Humidity is not sensed or displayed, and it does not have a hinged cover.) Four-pin EIA-485 (formerly RS-485) data port on the underside for easy temporary computer connection to the controller.

SEE ALSO: **KMD-1162** series web pages for details.

### Main Features

- Large, two-character LCD display for easy temperature viewing with automatic backlight
- Two up/down setpoint arrow buttons
- Two slide switches for heating/cooling change over and fan speed
- Designed primarily for fan coil units in hotel rooms or similar applications
- Four-pin EIA-485 (formerly RS-485) data port on the underside for easy temporary computer connection to the controller
- SASO PCP Registration KSA R-103260

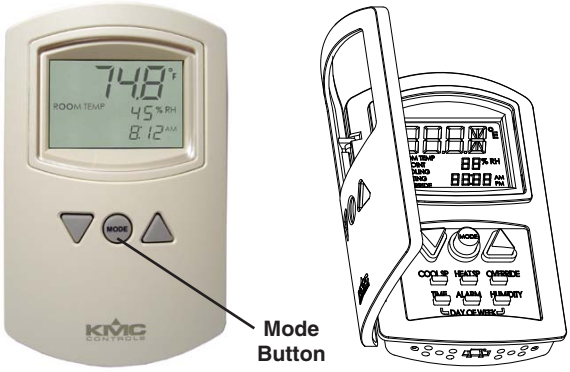
### Models

| | |
|---|---|
| KMD-1162 | Almond |
| KMD-1162W | White |

SEE ALSO: *NetSensor Accessories on page 23* and *NetSensor Selection Guide on page 9*.

## KMD-1183/1185

## NetSensors (Stand-Alone or Small Network)




This is a temperature/humidity-sensing, wall-mounted, programmable operator interface for use in a KMC direct digital controls system. Compared to the KMD-1161/1164/1181/1184, the KMD-1183/1185 has many similar features except that it has different display configuration and button functions/labels:

- The center **Mode** button allows easy cycling between display/set options for room temperature, cooling setpoint, heating setpoint, and override.
- Flipping open the cover allows access to six function buttons: **Cooling Setpoint**, **Heating Setpoint**, **Override**, **Time***, **Alarm***, **Humidity***, and (two buttons pressed together) **Day of Week***. (*Three buttons and a fourth combination of buttons may be reassigned and programmed with the controller to display or control the state of any point in the attached controller.)

SEE ALSO: **KMD-1183/1185** series web pages for details.

### Main Features

- Large, four-character LCD display for easy temperature viewing, plus smaller characters for time and (if applicable) relative humidity
- Mode and up/down arrow buttons accessible through cover; six additional function buttons behind the flip-open cover
- Seven buttons may be programmed with the controller to display or control the state of any point in the attached controller
- Four-pin EIA-485 (formerly RS-485) data port on the underside for easy temporary computer connection to the controller
- SASO PCP Registration KSA R-103260

### Models and Alarm Handling

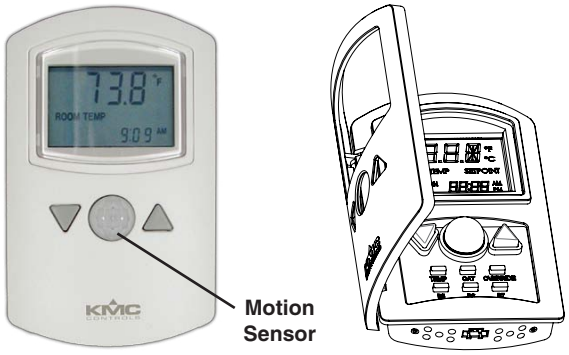
The only difference between the KMD-1183 and the KMD-1185 is how each NetSensor handles an alarm state signalled by the connected controller. The difference is described in the chart below.

| State | KMD-1183 | KMD-1185 |
|---|---|---|
| Alarm | Display shows room temperature. When Button 6 (ALARM) is pressed, "**ON**" is momentarily displayed. | Display shows flashing "**ALM**" (alternates with room temperature display). Pressing Button 6 suppresses "ALM" indication for 10 minutes, and if Button 6 is pressed again during the 10 minute suppression period, "ALM" shows momentarily. When "ALM" is flashing, if any button other than 6 is pressed, the display momentarily returns to the normal display corresponding to that button. |
| No Alarm | Display shows room temperature. When Button 6 is pressed, "**OFF**" is momentarily displayed. | |

SEE ALSO: *NetSensor Accessories on page 23* and *NetSensor Selection Guide on page 9*.

## KMD-1261/1281

## NetSensors (Motion Sensing)




These models are wall-mounted, temperature and motion sensing, programmable operator interfaces for use in a KMC direct digital controls system. Compared to the KMD-1161/1164/1181/1184 models, the KMD-1261/1281 models have many similar features except a motion sensor is included (in the place of the center button). The motion sensor can detect room occupancy with a range of up to 33 feet. Model KMD-1281 also includes humidity sensing.

The simple and functional design combined with programmable buttons make these models an ideal choice for installations that require temperature, humidity, motion sensing, and an operator interface in one unit.

### Main Features

- Large, easy to read, backlit LCD display for easy temperature viewing, plus smaller characters for time and relative humidity
- Detect room occupancy up to 33 feet with built-in motion sensor
- Convenient setpoint buttons accessible without opening the hinged cover; six additional buttons are located behind the cover
- Flexible applications with six buttons that may be programmed to display or control the state of any point in the attached controller
- Four-pin EIA-485 (formerly RS-485) data port on the underside for easy temporary computer connection to the controller
- SASO PCP Registration KSA R-103260

### Models

| | |
|---|---|
| KMD-1261 | Temperature only, light almond |
| KMD-12611W | Temperature only, white |
| KMD-1281 | Temperature and humidity, light almond |
| KMD-1281W | Temperature and humidity, white |

SEE ALSO: **KMD-1261/1281** series web pages for details.

SEE ALSO: *NetSensor Accessories on page 23* and *NetSensor Selection Guide on page 9*.

# NetView (Operator Interface)

## KMD-1002 *(KMDigital Only)*
## NetView

The NetView is an operator interface designed for viewing and controlling a KMC Tier 2 (sub LAN) network. The 4.9 x 2.5" LCD touch screen with blue backlighting provides crisp, easy-to-view access to a direct digital network without a computer or special programming. Based on password permissions stored in the network controllers, the following can be viewed and changed with a KMC NetView:

- Time and date
- Weekly schedules
- Annual schedules
- System groups (text only)
- Inputs
- Outputs
- Setpoints/Variables
- Alarm reporting
- Trend/Run Time Log Data (text Only)

### Main Features

| | |
|---|---|
| **Dimensions** | 7.19 x 6.19 in. (482.6 x 157.2 mm) |
| **Display** | |
| • Type | LCD touch panel |
| • Character size | 5 x 8 pixels |
| • Screen size | 42 characters by 16 rows, 256 x 128 pixels |
| • Viewing area | 2.56 x 4.9 in. (124.5 x 65.0 mm) |
| **Communications** | KMC Tier 2 EIA-485 (2400 to 38400 auto baud detection), max. one NetView per Tier 2 network |
| **Connections** | |
| • Network | Female modular jack |
| • Power | Screw terminals |
| **Power** | 24 VAC, 20 VA, HPO-0068 recommended |
| **Mounting** | |
| • Surface | Backplate mounts to 2 x 4 inch or 4 x 4 inch standard electrical handy-box or any flat surface. |
| • Panel | Optional brackets mount the NetView in 6.81 x 5.81 inch cutout. |
| **Material** | Light almond, flame-retardant plastic |
| **Regulatory** | |
| • UL 916 Energy Management Equipment listed | |
| • FCC Class B, Part 15, Subpart B | |
| • CE mark | |

SEE ALSO: **KMD-1002** series web pages for details.

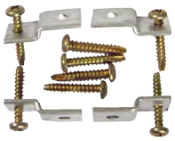
### Accessories

Plenum cable with modular connectors (NetSensor/NetView to controller):

| | |
|---|---|
| KMD-5690 | 25 foot |
| KMD-5691 | 50 foot |
| KMD-5692 | 75 foot |

| | |
|---|---|
| HPO-0068 | Plug-in transformer for KMD-1002 NetView |

| | |
|---|---|
| HMO-4540 | Panel mounting bracket and screws for mounting the KMD-1002 NetView in a 6.81 x 5.81 inch panel cutout (not needed for surface mounting) |



## KMD-7311/7312 Attain Cross-Reference

NOTE: The former KMD-7311/7312 Attain package included:

- NetView (KMD-1002) w/ transformer (HPO-0068)
- 4 x 4 controller (KMD-7301C for AHU applications or KMD-7302C for RTU) with transformer (XEE-6111-040)
- 75-foot plenum cable (KMD-5692)
- Wall sensor (STE-5012) and vertical and horizontal mounting plates (HMO-5036/5039)

These components are still available separately except for the STE-5012. Use one of the STE-6000 series sensors instead.

# Wireless Sensors

## STW-6000 and THW-1100 series
## Wireless Temperature and Humidity Sensors

STW-6010 and THW-1102

STW-6014

These wireless, compact, and stylish (white) room temperature and humidity sensors are designed for use with KMC controllers or other building automation systems.

- Easy mounting to flat surfaces.
- Reduce maintenance with energy-harvesting, solar powered technology.
- Save time and labor cost on installation.
- Choose from models with temperature only, temperature and humidity, and temperature with setpoint.
- Durable, low-profile, thermostat-style case is visually appealing.
- Sensors are compatible with Enocean gateways and are BACnet devices when used with a BAC-5301 gateway.

### Models

**For use in North America (315 MHz)**

| | |
|---|---|
| STW-6010W | Temperature Sensor |
| STW-6014W | Temperature Sensor and Setpoint Adjustment |
| THW-1102W | Temperature and Humidity Sensor |

**For use outside of North America (868 MHz)**

| | |
|---|---|
| STW-6010DW | Temperature Sensor |
| STW-6014DW | Temperature Sensor and Setpoint Adjustment |
| THW-1102DW | Temperature and Humidity Sensor |

### Main Features

**Power Supply**

- Energy harvesting solar cell with optional CR1225 lithium coin cell backup
- Time from fully discharged to fully operational is instantaneous with battery backup or typically less than 2.5 minutes with 400 lux of fluorescent or incandescent illumination with solar cell only
- Operational time in in full darkness is typically four days at 25° C with solar cell only (based on a measurement every 100 seconds and transmission every 1000 seconds)

**RF Communications**

- Antenna — Built-in wire whip
- Frequency — 315.0 or 868.3 MHz
- Output Power — 868.3 MHz: +8 dBm1(EIRP) ± 2.5 dB2 or 315.0 MHz: +92 dBµV/m1 ± 2 dB2
- Regulatory — 868.3 MHz: R&TTE EN 300 220 315.0 MHz: FCC CFR-47 Part 15
- Estimated range — 98 ft. (30 m) or less in open areas or 33 ft (10 m) or less in closed spaces

**Measurement Specifications**

- Temp. range — 32-104° F (0-40 °C)
- Temp. accuracy — ±0.9° F from 62 to 80° F (±0.5° C from 17 to 27 °C)
- Humidity accuracy (THW series only) — + 5% RH from 30-70% RH from 32-104° F (0-40° C)
- Setpoint dial — 54-90° F (12-32° C) over 270° rotation
- Transmission interval — Every 100 seconds upon change of measurement threshold and between 700 and 1400 seconds without a change of threshold

SEE ALSO: **Wireless Sensors** web page for details.

# Accessories

## Adapters and Cables

### KMD-5600 Series Cables

KMD-5614 Cable, 7-foot long, **4**-conductor, modular plug both ends (one included w/ KMD-5550/5556/5557/5559/5576)

KMD-5615 Cable, 7-foot long, **6**-conductor, modular plug both ends (one included w/ KMD-5550/5556/5557/5559)

KMD-5624 USB Communicator modular plug to NetSensor/FlexStat cable

KMD-5672 EIA-232 cable, KMD-5210/BAC-A1616BC/BAC-5050 serial port to PC, female 9-pin D-sub connector to terminal block

KMD-5673 EIA-232 cable, KMD-5205/5270 to PC, dual female 9-pin D-sub connectors, 6-foot long

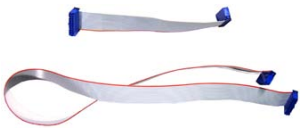
KMD-5674 Modem cable for use with KMD-5205/5270 (*but **NOT** with KMD-5210, BAC-5050, or BAC-A1616BC*), female 9-pin and male 25-pin D-sub connectors

Plenum cable with modular connectors, (controller to NetSensor/NetView):

KMD-5689 12 foot
KMD-5690 25 foot
KMD-5691 50 foot
KMD-5692 75 foot

Ribbon cables, KMD-5220/5221 modules to KMD-5210 series:

KMD-5660 6" I/O cable
KMD-5668 9" I/O cable
KMD-5661 14" I/O cable
KMD-5662 19" I/O cable
KMD-5663 24" I/O cable



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### KMD-5620 Series Adapters

KMD-5625-**1*** Female modular jack to 25-pin male serial D-sub connector, one included with KMD-**5559**

KMD-5625* One included with KMD-**5550/5556**

KMD-5627 Female modular jack to 9-pin **male** serial D-sub connector, **four**-conductor

KMD-5628-**1**** Female modular jack to 9-pin **female** serial D-sub connector, **six**-conductor, one included w/ KMD-**5559**

KMD-5628** One included with KMD-**5557**

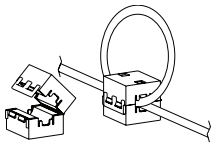
*NOTE: The KMD-5625-**1** and the older KMD-5625 look similar, but they are wired differently and are not interchangeable.

**NOTE: The KMD-5628-**1** and the older KMD-5628 look similar, but they are wired differently and are not interchangeable.

# Hardware, Miscellaneous

## Ferrite Core

HPO-6001 Replacement cable ferrite core



## Jumper (Power, EOL, and Output Override)

HPO-0063 Replacement two-pin jumper

## Reducer Bushing and Non-Rotational Bracket

HFO-0011 Reducer bushing, 1/2" to 3/8" shaft adapter for BAC/KMD-7000 series controller-actuators

HMO-4531 Replacement non-rotational bracket (one included with BAC/KMD-7000 series controller-actuators)

## Resistor (249 Ohm) Pack

HPO-0069 249 ohm resistors (pack of 100) for converting 4-20 mA signals into 1-5 VDC signals for controller inputs without built-in conversion

## Snap Track

HMO-4524 Replacement 3-1/4 x 8-1/2" Snap Track for KMD-7011/7013/7101/7102 contrllers; can also be snapped into shorter lengths to fit XEC-300x and XEE-1501 transducers and REE-210x/31xx relays

## SSS-1000 Series Differential Pressure Flow Sensors

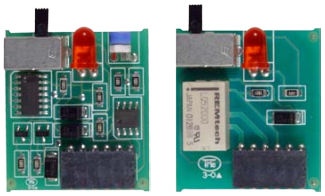
The differential pressure read between the high "H" port and the low "L" port can be used by the BAC/KMD-7000 series to determine the air flow. Connections are 1/4" (6 mm) nipples for 3/8" (10 mm) OD polyethylene tubing. Use a 3/8" barb to 1/4" barb adapter.

| | |
|---|---|
| SSS-1002 | 3-5/32 inches long, one set sensing points |
| SSS-1003 | 5-13/32 inches long, two sets sensing points |
| SSS-1004 | 7-21/32 inches long, three sets sensing points |
| SSS-1005 | 9-29/32 inches long, four sets sensing points |

NOTE: For maximum measurement accuracy, install the longest sensor that will fit into the duct.

# Interfaces and Converters

## HPO-670x Series Output Override Boards



For enhanced output options and for devices that cannot be conveniently powered directly from a standard controller universal output, install a relevant HPO-670x series output override board (in supporting controller models only). Each (except HPO-670x-1) has an accessible three-position slide switch for selecting the **"Hand-Off-Auto"** functions. In the "Hand" position, the output is manually energized, and the controller is provided with a feedback signal to indicate the output has been overridden. In the "Off" position, the output is manually de-energized, and the controller is provided with a feedback signal to indicate the output has been overridden. In the "Auto" position, the output is under the command of the controller. Each output board also has an LED to indicate when the output is turned On either manually or automatically.

Approvals include SASO PCP Registration KSA R-103260 and (for HPO-6701/6704 only) UL 916 Energy Management Equipment listed and UL 864 Smoke Control Equipment listed (UUKL).

SEE ALSO: **HPO-670x series** web pages for details.

### Models

**Triac (AC)***

| | |
|---|---|
| HPO-6701 | Triac, zero-cross switching, optical isolation |

**Analog (DC Voltage or Current) Outputs**

| | |
|---|---|
| HPO-6702 | 0–10 VDC analog, with adjustable override pot. |
| HPO-6704 | 4–20 mA, with adjustable override pot. |

**Relays (AC or DC)***

| | |
|---|---|
| HPO-6703* | Normally open relay |
| HPO-6705 | Normally closed relay |

*NOTE: HPO-6703-**1** is always in auto mode and **without** the manual HAO slide switch. The HPO-6703 has the switch.

NOTE The **HPO-6802 raised cover** with labels is required to secure override boards in **"metal-case"** controllers (BAC/KMD-5831, BAC-A1616BC, CAN-A16BEIO, KMD-5205, KMD-5221, and KMD-5270). The cover is not applicable to current model controllers with raised plastic cases (e.g., BAC/KMD-5801/5802).

## HTO-1101/1102/1103 Firmware Upgrade Kits (and $CO_2$ Gas Tubing Adapter)

These kits enable upgrading firmware in KMDigital and BACnet controllers, the BAC-5050 router, and the KMD-5540 series CommTalk protocol interfaces. The kits include the relevant programming pod and cables. The HTO-1103 (shown in part) also has adapter plates for the three types of FlexStat backplates as well as adapter $CO_2$ gas tubing for calibrating BAC-14xxxx models.

The latest firmware is available from the product pages or download section of KMC Control's Partner web site.

### Models

| | HTO-1101 | HTO-1102 | HTO-1103 |
|---|---|---|---|
| **Controller, Router, CommTalk Models** | KMD-5540 Series CommTalk<br>KMD-7001<br>KMD-7002<br>KMD-7003<br>KMD-7011<br>KMD-7013<br>KMD-7051<br>KMD-7052<br>KMD-7053<br>KMD-7101<br>KMD-7102<br>KMD-7301<br>KMD-7302<br>KMD-7401 | KMD-5205<br>KMD-5210<br>KMD-5270<br>KMD-5801<br>KMD-5802<br>KMD-5821<br>KMD-5831<br>BAC-5050 Router<br>BAC-5801<br>BAC-5802<br>BAC-5831<br>BAC-7001<br>BAC-7003<br>BAC-7051<br>BAC-7053<br>BAC-7301<br>BAC-7302<br>BAC-7303<br>BAC-7401 | All FlexStat models (and includes adapter tubing for $CO_2$ gas calibration of BAC-1**4**xxxx models) |
| **Cross-Reference** | *Replace the discontinued KMD-569**8** with USB interface—the parallel interface of the KMD-569**6** is no longer supported* | | *Replaces the discontinued KMD-569**9*** |

## KMD-5540 Series CommTalk Protocol Interfaces

*(KMDigital Only)*

The KMC CommTalk Protocol Interface provides a standard equipment interface between KMC networks and third-party equipment interfaces. Depending on the model, some CommTalk Protocol devices respond to the third-party device as if it were communicating with a KMD-7000 series direct digital controller. Others perform as a data translator between the third-party interface and a KMD-5210 LAN Controller. The KMD-5540 features output configurations to meet popular standard equipment interfaces and simple installation and setup.

### Models

| | |
|---|---|
| KMD-5540-001 | Carrier DataPort interface |
| KMD-5540-002 | Carrier DataLink interface |
| KMD-5540-003 | York Talk XL interface |
| KMD-5540-004 | McQuay MicroTech OPM (Open Protocol Master) interface |
| KMD-5540-005 | ModBus interface |

SEE ALSO: **KMD-5540 series** web pages for more details.

### Main Features

**Supply Voltage** 24 VAC (–15/+20%) Class 2
**Input Power** 10 VA Maximum
**Baud Rate** 9,600 to 38,400
**Communications** (2) EIA-485 and (2) EIA-232 with removable terminal blocks for 14–22 AWG
**Auxiliary Communications**
(2) EIA-485 with modular connectors for PC connection or for KMD-1001 NetView
**Communications Wiring**
Belden 82760 or equivalent, 18 AWG twisted, shielded, 5.5 ohms/1000 ft., and ≤ 51 pf/ft.
EIA-485: Maximum 4000 ft. without repeater
EIA-232: Maximum 50 ft. without repeater

### Accessories

| | |
|---|---|
| HPO-0054 | Replacement fuse bulb |
| HPO-0063 | Replacement jumper |
| KMD-5614 | Replacement 7-foot long, **4**-conductor, modular plug both ends |
| KMD-5615 | Replacement 7-foot long, **6**-conductor, modular plug both ends |
| KMD-5625**-1*** | Replacement female modular jack to 25-pin male serial D-sub connector |
| KMD-5628**-1*** | Replacement female modular jack to 9-pin female serial D-sub connector, six-conductor |

*NOTE: The KMD-5625**-1** and the older KMD-5625 look similar, but they are wired differently and are not interchangeable. The KMD-5628**-1** and the older KMD-5628 also look similar, but they are wired differently and are not interchangeable. The KMD-5540 series interfaces use the KMD-5625**-1** and the KMD-5628**-1**.

## KMD-5550/5556 (*KMDigital Only*)

## Modem Interfaces

KMD-5550/5556 modem interfaces provide the communication link between **discontinued KMD-5501/5502/5504/5505** controllers or subnetworks with a modem to a compatible personal computer. They operate by converting EIA-485 signals from KMC equipment into the EIA-232 signals common to computer modem equipment and PC compatible computers. They operate with any Hayes™ compatible modem, and they are designed to be used with a standard modem configuration set to specific KMC parameters.

**NOTE: These are for direct replacements in existing installations using operating systems through Windows 98. For new installations, use a KMD-5559 series CommTalk.**

SEE ALSO: **KMD-5550/5556 series** web page for more details.

SEE ALSO: The KMDigital 5xxx Series Controller Replacement Cross-Reference section in the KMDigital Catalog Supplement (SP-093) for replacements of the KMD-5501/5502/5504/5505.

### Main Features

| | |
|---|---|
| **Supply Voltage** | 5 volts DC from KMD-5500 series controller |
| **Input Power** | 42 mA |
| **Material** | Light almond plastic |

### Models

| | |
|---|---|
| KMD-5550 | Modem (no dial-out) |
| KMD-5556 | Modem with telephone dial-out capability to local controllers |

### Accessories

| | |
|---|---|
| KMD-5614 | Replacement 7-foot long, 4-conductor, modular plug both ends (for controller connection) |
| KMD-5615 | Replacement 7-foot long, 6-conductor, modular plug both ends (for modem connection) |
| KMD-5625* | Replacement female modular jack to 25-pin male serial D-sub connector adapter |

*NOTE: The KMD-5625**-1** and the older KMD-5625 look similar, but they are wired differently and are not interchangeable. The KMD-5550/5556 uses the **KMD-5625**.

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## KMD-5557 (*KMDigital Only*)

## Computer Interface (EIA-485 to EIA-232 Converter)

The KMD-5557 Computer Interface provides the communication link between KMD-5500/5800/6000/7000 series controllers or subnetworks and an IBM™ compatible personal computer (that does not have a USB port). **This product is NOT certified to operate with Windows 2000, XP, or Vista.** For Windows 2000 and later, use the KMD-5576 USB to EIA-485 Communicator.

The KMD-5557 is optically isolated to prevent signal interference and converts the EIA-485 signal used by the controller to an EIA-232 signal used by the PC. The KMD-5557 is designed specifically to provide a communications interface between the EIA-485 signal used by KMD-5500/5800/6000/7000 series controllers, or subnetworks attached to these controllers, and a compatible PC.

SEE ALSO: **KMD-5557** web page for more details.

### Main Features

| | |
|---|---|
| **Supply Voltage** | 5 volts DC from KMD-5500 controller or PC |
| **Input Power** | |
| • Controller | 26 mA |
| • PC | 7 mA |
| **Material** | Beige plastic |

### Accessories

| | |
|---|---|
| KMD-5614 | Replacement 7-foot long, 4-conductor, modular plug both ends (for controller connection) |
| KMD-5615 | Replacement 7-foot long, 6-conductor, modular plug both ends (for computer connection) |
| KMD-5628* | Replacement female modular jack to 9-pin female serial D-sub connector adapter |

*NOTE: The KMD-5628**-1** and the older KMD-5628 look similar, but they are wired differently and are not interchangeable. The KMD-5557 uses the **KMD-5628**.

## KMD-5559 Series *(KMDigital Only)*

## CommTalk Communications Interfaces

The KMD-5559 CommTalk is a microprocessor-based, programmable, communications interface module. The CommTalk manages all communications between the KMC Digital Tier 2 network and an external reporting service such as a modem-to-modem/PC, modem-to-pager service, or a PC.

The CommTalk can be programmed to initiate a modem-to-modem/PC connection. The CommTalk will send any alarms and manage any request from a PC before terminating the modem-to-modem/PC connection.

The CommTalk may also be programmed to initate a modem-to-pager service connection. The CommTalk will deliver the appropriate access codes to the pager service and send a text or numeric message as programmed. The pager number, access codes, and messages are programmed in the KMC Digital controllers.

### Models

| | |
|---|---|
| KMD-5559 | 19.2K Baud Modem/PC, supplied with the HPO-0068 transformer |
| KMD-5559E | Supplied with**out** HPO-0068 (for 240 volt AC mains, use Stancor STAF-2098F or equivalent) |
| KMD-5559-2 | 9.6K Baud Modem/PC, supplied with HPO-0068 |

SEE ALSO: **KMD-5559 series** web pages for more details.

### Main Features

**Installation**

| | |
|---|---|
| • Supply Voltage | 9 to 24 volts AC or DC supplied by the HPO-0068 (requires 2.1 x 5.5 mm barrel plug) |
| • Dimensions | 5.38 x 3.38 x 1.32 inches (137 x 86 x 34 mm) |
| • Weight | 8.7 oz (247 grams) |

**KMD-5559 and KMD-5559E Baud Rates**

| | |
|---|---|
| • CommTalk to Controller | Auto (9600 to 38400) |
| • CommTalk to PC or modem | 19.2K (fixed) |

**KMD-5559-2 and KMD-5559-2E Baud Rates**

| | |
|---|---|
| • CommTalk to Controller | Auto (9600 to 38400) |
| • CommTalk to PC or modem | 9.6K (fixed) |

**Regulatory** UL 916 Energy Management Equipment listed
CE compliant

### Accessories

| | |
|---|---|
| KMD-5628**-1*** | Replacement female modular jack to 9-pin female D-sub connector PC adapter |
| KMD-5625**-1*** | Replacement female modular jack to 25-pin male D-sub connector modem adapter |
| KMD-5614 | Replacement four-wire flat cable with male modular connectors for CommTalk to KMD digital controller |
| KMD-5615 | Replacement six-wire flat cable with male modular connectors for CommTalk to modem |
| HPO-0068 | Replacement required power supply |
| KMD-5569 | 56K baud external modem |

*NOTE: The KMD-5625**-1** and the older KMD-5625 look similar but are not interchangeable. The KMD-5628**-1** and the older KMD-5628 also look similar are not interchangeable. The KMD-5540 series interfaces use the KMD-5625**-1** and the KMD-5628**-1**.

## KMD-5569
## 56K Faxmodem

The KMD-5569 is a modem approved for dial-up applications with the following KMC Controls products:

- BAC-A1616BC Building Controller
- BAC-5000 BACstage
- BAC-5050 FullBAC Router
- KMD-5205 LANLite
- KMD-5210 (all models) LAN Controller
- KMD-5270 (all models) WebLite
- KMD-5559/5559-2 CommTalk
- KMD-5791/5792 WinControl XL (Plus)

Capable of receiving at up to 56 kbps and sending at up to 48 kbps (or 31.2 kbps with V.90 server). (Due to FCC regulations, receiving speeds are limited to 53 kbps; actual speeds may vary.)

SEE ALSO: **KMD-5569 series** web pages for more details.

### Main Features

Modem standards and protocols supported:

- V.92 56 kbps ITU standard
- V.90 56 kbps ITU standard
- V.34 33.6 kbps ITU standard

Compatible with ITU and Bell standards from:

- 56 kbps to 1200 bps
- V.42/MNP 2-4 error control, V.42 bis/MNP 5 data compression
- Fax: Class 1 and 2.0 Group III 14.4 Kbps send and receive

Requirements:

- Computer with Windows 2000 or XP for operations with BACstage or WinControl
- Dedicated 56K compatible local analog telephone line
- Serial cable (not included)

### Accessories

| | |
|---|---|
| KMD-5674 | Modem cable for KMD-5205 series and KMD-5270 series (but **NOT** with KMD-5210, BAC-5050, or BAC-A1616BC) |
| KMD-5625-1* | Modular connector to 25-pin D-sub serial adapter for KMD-5559 ComTalk (included with CommTalk) |
| KMD-5615 | **Six**-wire flat cable with male modular connectors for KMD-5559 CommTalk to modem (included with CommTalk) |

*NOTE: The KMD-5625-**1** and the older KMD-5625 look similar but are not interchangeable.

## KMD-5576
## USB to EIA-485 Communicator

The ("hockey puck") KMD-5576 is a USB (Universal Serial Bus) to EIA-485 (formerly RS-485) converter. It connects a computer USB port to a BACnet or KMDigital network by plugging into a KMC Tier 2 (only) controller or a NetSensor/FlexStat/STE-5x24/STE-6000 series data port. It provides network access to a computer running BACstage or WinControl (but not TotalControl).

SEE ALSO: **KMD-5576** web pages for more details.

### Main Features

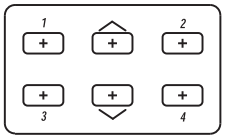
| | |
|---|---|
| Operating System | Windows 2000, XP, Vista, and Windows 7 (32 and 64 bit)—not compatible with earlier Windows versions that do not support USB |
| Power | No external power source is required; it draws power from the USB port and Tier 2 device |
| USB Compliance | USB 2.0 |
| Optical Isolation | Up to 2.5 kilovolts between the ports |
| Indicators | Green, USB transmit and receive LEDs |

### Accessories

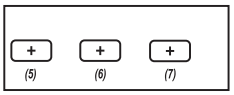
| | |
|---|---|
| KMD-5614 | Replacement cable, USB Communicator to controller port, 7-foot long, 4-conductor, modular plug both ends |
| KMD-5624 | Replacement cable, USB Communicator to NetSensor, FlexStat, or STE-6000 data port |

# NetSensor Accessories

HDO-4008 KMD-**1151/1171** six-button, light almond plastic adhesive labels



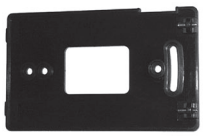

HDO-4101 KMD-**1151/1171** three-button plastic adhesive labels for for under the flip-open cover



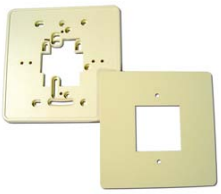

HMO-1161 KMD-**116x/118x/12x1** mounting plate allows mounting to horizontal 2 x 4" or 4 x 4" handy boxes, light almond (shown)

HMO-1161W White

HMO-5040 KMD-**1151/1171** replacement mounting base, vertical standard plate mounts to 2 x 4" handy-box, includes 2 hex screws



HMO-5042 KMD-**1151/1171** mounting plate allows mounting to horizontal 2 x 4" or 4 x 4" handy boxes, light almond



HPO-0044 Replacement cover hex screw

HPO-0064 KMD-**1151/1171** replacement flip-out cover door

HPO-1161 Foam insulating gasket

KMD-5559 NetSensor EIA-485 to EIA-232 CommTalk (see ***KMD-5559 Series CommTalk Communications Interfaces on page 21*** for details)

KMD-5576 NetSensor EIA-485 to USB Communicator (see ***KMD-5576 USB to EIA-485 Communicator on page 22*** for details)

KMD-5624 Replacement NetSensor to CommTalk or USB Communicator cable

Plenum cable with modular connectors, (NetSensor to controller):

| | |
|---|---|
| KMD-5690 | 25 foot |
| KMD-5691 | 50 foot |
| KMD-5692 | 75 foot |

SP-001 Screwdriver (KMC branded), narrow flat blade end and (for NetSensor cover screws) 1/16" hex end, with pocket clip

**NOTE: For FlexStat accessories, see the FlexStat Catalog Supplement and Selection Guide (SP-091).**

# Power and Protective Devices

## Power Supplies and Transformers

| | |
|---|---|
| HPO-0068 | Plug-in power supply for KMD-1002, KMD-5559, and BAC-5301 |

| | |
|---|---|
| KMD-5563 | Replacement +5 and ±15 VDC power supply with 5-pin DIN connector for BAC-5050 and KMD-5210 series |

| | |
|---|---|
| XEE-6111-040 | Transformer, 120-to-24 VAC, 40 VA, single hub |
| XEE-6112-040 | Transformer, 120-to-24 VAC, 40 VA, dual hub |
| XEE-6111-050 | Transformer, 120-to-24 VAC, 50 VA, single hub |
| XEE-6112-050 | Transformer, 120-to-24 VAC, 50 VA, dual hub |
| XEE-6211-050 | Transformer, 277-to-24 VAC, 50 VA, single hub |
| XEE-6212-050 | Transformer, 277-to-24 VAC, 50 VA, dual hub |
| XEE-6311-050 | Transformer, 120/240/277/480-to-24 VAC, 50 VA, dual hub* |
| XEE-6111-075 | Transformer, 120-to-24 VAC, 75 VA, single hub* |
| XEE-6112-075 | Transformer, 120-to-24 VAC, 75 VA, dual hub* |
| XEE-6311-075 | Transformer, 120/208/240/480-to-24 VAC, 75 VA, single hub* |
| XEE-6111-100 | Transformer, 120-to-24 VAC, 96 VA, single hub* |
| XEE-6112-100 | Transformer, 120-to-24 VAC, 96 VA, dual hub* |
| XEE-6311-100 | Transformer, 120/240/277/480-to-24 VAC, 96 VA, dual hub* |

(* = includes a built-in circuit breaker)

**Single Hub**
**XEE-6111 Shown**

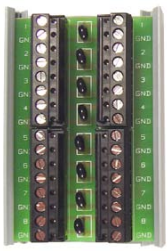
SEE: **XEE-6000 series** web pages for details.

## Fuse and Fuse Bulb

| | |
|---|---|
| HPO-0053 | Fuse, 1 A, fast acting, 5 x 20 mm |

| | |
|---|---|
| HPO-0054 | Fuse bulb for network connection protection/isolation |

## HPO-0070/0071
## Input/Output Transient Suppressor Boards



HPO-0071 Shown

The HPO-0071 is an eight-circuit transient suppressor board used on the inputs of digital controllers, and the twelve-circuit HPO-0070 is used on the outputs. (If such a controller has more than eight inputs, an additional HPO-0071 will be needed.) When properly installed and wired, these board can protect the digital controllers from high-voltage transients. (These boards are required on every controller involved in smoke control applications.)

### Models

| | |
|---|---|
| HPO-0070 | Twelve-output transient suppressor board |
| HPO-0071 | Eight-input transient suppressor board |

### Main Features

| | |
|---|---|
| **Mounting** | Snap Track |
| **Technology** | Transorbs |
| **Max. Peak Current** | 250 A, 1 time (@ 8/20 µs);<br>125 A, 2 times (@ 8/20 µs) |
| **Voltage** | 18 Volts |
| **Clamping Voltage** | 40 Volts @ 8/20 µs |
| **Regulatory** | UL 864 Smoke Control Equipment listed (UUKL)<br>UL 916 Energy Management Equipment listed |

SEE: **HPO-007x** web pages for more details.

---

## KMD-5567
## Network Surge Suppressor Module

The KMD-5567 is a two part unit consisting of the HPO-0066 suppressor module and the HPO-0067 terminal connector. When properly installed and wired, the KMD-5567 can help protect the digital communication circuitry from lightning damage. It is installed at building exits and entrances to provide surge suppression for one or two pairs of data signal lines. In smoke control applications, one KMD-5567 is also required for the EIA-485 terminals of every controller and repeater as well.

### Main Features

| | |
|---|---|
| **Peak Surge Current** | 8 x 20 µs 10 kA; 10 x 700 µs 500 A per line |
| **Life Expectancy** | 8 x 20 µs (2000 A) 100 occurrences,<br>10 x 700 µs (400 A) 100 occurrences |
| **Response Time** | < 1 nanosecond |
| **Voltage Clamp** | 15 volts |
| **Technology** | SAD hybrid |
| **Resistance** | 8.0 ohms per line |
| **Capacitance** | 1500 pf (average) |
| **Regulatory** | UL 497B Isolated Loop Circuit Protectors listed<br>UL 864 Smoke Control Equipment listed (UUKL) |

### Accessories

| | |
|---|---|
| HPO-0066 | Suppressor module (top) |
| HPO-0067 | Suppressor terminal connector (bottom) |

SEE: **KMD-5567** web page for details.

---

## KMD-5575
## Repeater-Isolator

The KMD-5575 extends and reconditions EIA-485 network communications as well as enabling "T" or branch networks. A KMD-5575 is required after every 31 consecutive controllers on KMDigital or BACnet subnetworks (e.g., between controllers 31 and 32) or if the cumulative wiring distance exceeds 4,000 feet. (For smoke control applications, the maximum total length of the EIA-485 network cable, including all repeaters, is 4,000 feet.) In addition, the KMD-5575 is required for "T" or branch network wiring configurations.

### Main Features

| | |
|---|---|
| **Supply Voltage** | 24 VAC (–15%/+20%), 60 Hz, 3 VA, Class 2 |
| **Baud Rate** | 9,600 to 38,400 |
| **Regulatory** | UL 864 Smoke Control Equipment listed (UUKL) |

### Accessories

| | |
|---|---|
| HPO-0063 | Replacement two-pin jumper |
| HCO-1102 | Steel control enclosure, 10.1 x 2.4 x 7.1 inches (257 x 62 x 181 mm) |
| XEE-6111-040 | Transformer, 120-to-24 VAC, 40 VA, single-hub |
| XEE-6112-040 | Transformer, 120-to-24 VAC, 40 VA, dual-hub |
| XEE-6112-100 | Transformer, 120-to-24 VAC, 96 VA, dual-hub (required in smoke control applications) |

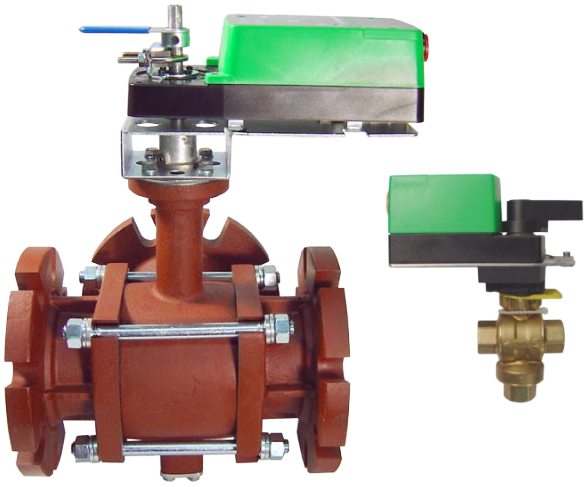
SEE: **KMD-5575** web page for details.

# Input, Output, and Other Devices

**This catalog supplements the information in the larger SP-071 KMC Catalog (Electronic and Pneumatic Controls).** See that catalog for information about the many input, output, and other devices for the digital controllers.

**Output options include:**

- **Actuators** (10 to 320 in-lb., tri-state/proportional/two-position inputs, selectable fail-safe direction, and other control options)
- **Valves** (1/2" to 6", 2-way and 3-way, and various actuator options)



**Other miscellaneous accessory options include:**

- **Controllers** (analog electronic and low limit)
- **Relays** (multiple inputs, outputs, and control options)
- **Thermostats** (analog electronic)
- **Enclosures** (various sizes for relays, controllers, and actuators)

Many of these are used with KMC's older analog electronic controllers as well as with the latest digital controllers.

**Input options include:**

- **Sensors and Transmitters** (temperature, humidity, air flow, pressure, smoke, CO, $CO_2$, and refrigerant)
- **Switches** (limit, position, and pressure)
- **Transducers/Converters** (pressure, air flow, current, voltage, and pulse width)

# Index


**A**

Accessories: *16*
  Actuators: *17*
  Adapters and Cables: *16*
  Controllers: *16*
  Hardware, Miscellaneous: *17*
  Input, Output, and Other Devices: *26*
  Interfaces and Converters: *18*
  NetSensors: *23*
  Power and Protective Devices: *24*
Actuator-Controller Accessories: *17*
Adapters: *16*, *17*, *18*
Attain: *14*

**B**

BAC-12xxxx/13xxxx/14xxxx Series: *7*
BAC-5050: *7*
BAC-5801/5802: *7*
BAC-7001/7051: *7*
BACnet
  Brochures: *7*
  LAN Controller Interface: *8*
Bracket, Non-Rotational: *17*
Brochures: *7*

**C**

Cables: *16*
Carrier DataLink Interface: *19*
Carrier DataPort Interface: *19*
CO2 Gas Tubing Adapter: *18*
CommTalk Interfaces: *19*, *21*
Communicator, USB to Network: *22*
Condensed Catalog (Electronic and Pneumatic Controls): *5*, *7*, *26*
Controller-Actuator Accessories: *17*
Converters: *18*, *23*
Cross-Reference
  Attain Package: *14*
  Controller: *14*
  KMD-1101/1104: *11*
  KMD-1121/1124: *11*
  KMD-1154/1174: *11*
  KMD-5696/5698/5699: *18*
  NetSensor: *11*

**D**

Digital Designer's Guide: *7*
Digital Sensors: *9*

**E**

EIA-232 Cable: *16*
EIA-485 to EIA-232 Converter: *20*
Enclosures: *26*

**F**

Faxmodem: *22*
FCU (Fan Coil Unit): *12*
Ferrite Core: *17*
Firmware Upgrade Kits: *18*
Flash Upgrade Kit: *18*
Fuses and Fuse Bulbs: *24*

**H**

Hardware: *17*
HCO-0070/0071: *25*
HFO-0011: *17*
HMO-4524: *17*
HMO-4531: *17*
HMO-4540: *14*
HMO-5040: *23*
HMO-5042: *23*
Hockey Puck (KMD-5576): *22*
HPO-0063: *17*
HPO-0064: *23*
HPO-0066: *25*
HPO-0067: *25*
HPO-67xx Series: *18*
HPO-0068: *14*, *24*
HPO-0069: *17*
HPO-6802: *18*
HTO-110x Firmware Upgrade Kits: *18*

**I**

Interfaces: *18*

**J**

Jumper: *17*

**K**

KMC
  Promotional Items: *7*
KMC Controls
  Company Information: *6*
  Web Site: *6*
KMD-569x: *23*
KMD-1100 Series Accessories: *23*
KMD-1101/1104 Cross-Reference: *11*
KMD-1121/1124 Cross-Reference: *11*
KMD-1151/1171: *11*
KMD-1154/1174 Cross-Reference: *11*
KMD-1161/1164/1181/1184: *12*
KMD-1162: *12*
KMD-1183/1185: *13*
KMD-1261/1281: *7*, *13*
KMD-5205: *8*
KMD-5210/5211 Series: *8*
KMD-5501/5502/5504/5505, Modem Interfaces: *20*
KMD-5540 Series: *19*
KMD-5550 Series: *20*
KMD-5557: *20*
KMD-5559 Series: *21*
KMD-5563: *24*
KMD-5567: *25*
KMD-5569: *22*
KMD-5575: *25*
KMD-5576: *22*, *23*
KMD-5610 Series: *16*, *22*
KMD-5615: *16*
KMD-5620 Series: *16*, *22*
KMD-5624: *23*
KMD-5625: *16*
KMD-5625-1: *16*
KMD-5627: *16*
KMD-5628: *16*
KMD-5628-1: *16*
KMD-5660 Series: *16*
KMD-5670 Series: *16*
KMD-5672: *16*
KMD-5674: *16*
KMD-5689: *16*

KMD-5690: *14*, *16*
KMD-5691: *14*, *16*
KMD-5692: *14*, *16*
KMD-5696/5698/5699 Cross-Reference: *18*
KMD-5791: *8*
KMD-5801/5802: *8*
KMD-7001/7051: *8*
KMD-7002/7052: *8*
KMD-7003/7053: *8*
KMD-7011/7011C: *8*
KMD-7013/7013C: *8*
KMD-7101/7101C/7102/7102C: *8*
KMD-7300/7400 Series: *8*
KMD-7311/7312: *14*
KMDigital Brochures: *8*

**L**

LANLite: *8*

**M**

McQuay MicroTech OPM (Open Protocol Master) Interface: *19*
Modbus Interfaces: *19*
Modem: *22*
  Cable: *16*
  Interfaces: *20*

**N**

NetSensors: *9*
  Accessories: *23*
  Replacement Cross-Reference: *11*
NetView: *14*
Non-Rotational Bracket: *17*

**P**

PLC-8: *8*
PLC-16: *8*
Promotional Items: *7*
Publications: *6*, *7*

**R**

Reducer Bushing: *17*
Reference Materials: *7*
Relays
  External/Accessory: *26*
  In Output Override Board: *18*
Repeater: *25*
Resistor (249 Ohm): *17*
Ribbon Cables (for connection to LAN Controller): *16*

**S**

SB-022 Digital Designer's Guide: *7*
SB-xxx Brochures: *7*
Selection Guides: *9*
Sensors
  Differential Pressure Flow: *17*
  NetSensors: *9*
  NetView Operator Interface: *14*
  Wireless: *15*
Serial Port Cable: *16*
Snap Track: *17*
SP-001 Screwdriver: *23*
SP-071 Condensed Catalog: *5*, *7*
SP-091 FlexStat Catalog Supplement and Selection Guide: *5*
SP-092 BACnet Catalog Supplement: *5*
SP-093 KMDigital Catalog Supplement: *5*
SSS-1000 Series: *17*
STW-6000: *15*

**T**

THW-1100: *15*
Tier 2 Controllers, KMDigital: *14*
TotalControl: *7*
Transformers and Power Supplies: *24*
Triacs: *18*

**U**

USB to EIA-485: *22*

**V**

VAV: *8*

**W**

WebLite: *8*
Web Site: *6*
WinControl XL and XL Plus: *8*
Wireless Sensors: *15*

**Y**

York Talk XL Interface: *19*

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