

Overview

HVAC Module (See Figure 1) belongs to HDL KNX/EIB series, and it supports control of heating, cooling, high/medium/low fan speed. 7 independent floor heating control channels can be set. In conjunction with digital temperature sensor, the actuator achieves precise temperature control. In addition, 5 switch output channels and 2 DC0-10V output channels can be set for staircase lights and other requirements.

Functions

- 7 independent floor heating control channels;
- Up to 7 digital temperature sensors supported;
- 5 relay output channels;
- 2 DC0-10V output channels (10mA/CH);
- Fan speeds: High, Medium, Low
- Working modes: Heating, Cooling
- Operation modes: Comfortable, Standby, Night, Protection
- Main functions: Fan speed, Valve status report, Local 7 channels temperature sampling, Local temperature report, Operation time statistics, Channel status response, Power-on status recall, Power-off status saving, Staircase lights, On/Off delay, Protection delay, PWM control output
- Active control and passive control: More flexible to work in conjunction with panels by different manufacturers. When in active control mode, this module can work in conjunction with panels without PI algorithm, for example M/DLP04.1. When in passive control mode, this module can work in conjunction with panels with algorithm, for example Siemens 5WG1.

Important Notes

- Programming - The device is compliant with the KNX standard and the parameters are set by the Engineering Tool Software (ETS).
- Type of FAN - Check the type of FAN type, make sure the type is AC or 0-10V DC and connected to correct terminal.
- KNX cable - dedicated KNX standard cable.
- Connections - Hand in hand connection recommended.

Product Information

Dimensions - See Figure 2 - 3

Components - See Figure 4

2.5 Meter Digital Thermometer - See Figure 5

Wiring - See Figure 6-11

- Label area
- Channel F, G: DC 0-10V output
- Temperature sensor terminal: up to 7 digital temperature sensors supported
- KNX/EIB interface
- Programming button & LED indicator
- Working LED
- Channel D, E: heating or cooling or relay output
- Channel A, B, C: fan speed or relay output

Installation - See Figure 12 - 14

- Step 1. Fix the DIN rail with screws.
- Step 2. Buckle the bottom cap of the HVAC Module on the edge of the DIN rail.
- Step 3. Press the device on the DIN rail, slide it and fix it up until an appropriate position is adjusted.

Safety Precautions

- The installation and commissioning of the device must be carried out by HDL or the organization designated by HDL. For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.
- The device should be installed with Din rail in DB box. HDL does not take responsibility for all the consequences caused by installation and wire connection that are not in accordance with this document.
- Please do not privately disassemble the device or change components, otherwise it may cause mechanical failure, electric shock, fire or body injury.
- Please resort to our customer service department or designated agencies for maintenance service. The warranty is not applicable for the product fault caused by private disassembly.
- It is not allowed to exceed the range.
- CAUTION - Risk of Electric Shock - More than one disconnect switch may be required to de-energize the equipment before servicing.
- The marking appears on the device, shown below shall be used to indicate that the device is for use with copper wire. The marking shall be legible with letters at least 2.4 mm high. "Use copper wire only", "Cu wire only" or equivalent wording, or a marking containing both the symbols as the illustrations.

Package Contents

HDL-M/FCU01.10.1*1 / Label*5 / 2.5m Digital Temperature Sensor*1 / Datasheet*1

产品概述

空调模块 (见图1) 是HDL KNX/EIB的系列产品之一, 具有制热、制冷、高风、中风、低风等控制。可设置7个独立的地暖控制通道, 结合数字温度传感器以达到温度的精确控制。除此之外, 还可以设置5个开关输出通道以及2个0-10V输出通道, 用于楼梯灯以及其他的的应用需求。

功能说明

- 具有7个独立的地暖控制通道
- 最多可接7个数字温度传感器
- 具有5个继电器输出回路
- 具有2个0-10V输出通道 (10mA/CH)
- 风速: 高、中、低风
- 工作模式: 制热、制冷
- 操作模式: 舒适、待机、夜晚、保护
- 主要功能: 风速、阀门状态报告、本地7路温度采样、本地温度报告、通道运行时间统计、通道状态响应、上电状态恢复、掉电状态保存、楼梯灯、开关延时、保护延时、PWM控制输出
- 主动控制和被动控制: 能够更加灵活地与不同厂家的面板配合。主动控制: 与没有PI算法的面板 (比如M/DLP04.1) 配合使用。被动控制: 与带有PI算法的面板 (比如西门子的5WG1) 配合使用。

注意事项

- 编程 - 本设备属于KNX标准设备, 使用ETS软件进行编程
- 风机类型 - 检查风机类型, 确认风机连接是AC或者是0-10VDC, 连接到正确的端口上
- KNX总线 - 使用KNX标准专用电缆
- 电线连接 - 推荐使用手拉手的连接方式

产品信息

产品尺寸 - 见图 2 - 3

部件 - 见图 4

2.5米数字温度传感器 - 见图 5

产品接线 - 见图 6-11

- 标签位置
- F, G回路: 0-10V输出端
- 温度传感器接线端: 最多可连接7个数字温度传感器
- KNX/EIB接口
- 编程按键&LED指示灯
- 工作指示灯
- D, E回路: 制热、制冷或继电器输出
- A, B, C回路: 风速或继电器输出

设备的安装-见图 12-14

- 步骤1. 用螺丝固定丁导轨。
- 步骤2. 将空调模块底盖的一端扣到导轨的边上。
- 步骤3. 将整个模块压到导轨上, 并滑动模块直至调整到合适的位置则固定下来。

安全警告

- 本设备的安装及调试工作必须由我司或我司指派机构进行。其电气安装的计划和施工, 必须遵守当地相关的安全标准和法规。
- 该产品需以丁导轨安装方式, 安装在配电箱内, 未按照本说明书进行安装及接线方式的, 所造成的一切后果皆与我司无关。
- 请不要私自拆装或更换零部件, 否则可能会导致机械故障、电击、火灾或身体伤害。
- 请将一切维修工作交由我司售后部门或指定机构进行, 本产品的保修范围不适用于因用户拆卸产品而导致的故障。
- 不得超量使用。
- 警告 - 为防止触电 - 在维修设备前, 需要一个以上的断路器开关来断开设备电源。
- 设备上的标识, 如下图所示, 应用来指示设备配合铜线使用。标记应以至少2.4毫米高的字母书写。"只可使用铜线"、"仅使用铜线"或等效的措辞, 或包含两个符号的标记作为插图说明。



装箱清单

HDL-M/FCU01.10.1*1 / 标签纸*5 / 2.5米数字温度传感器*1 / 说明书*1



Figure 1. HVAC Module
图 1. 空调模块

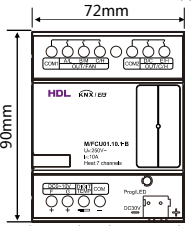


Figure 2. Dimensions - Front View
图 2. 尺寸图 - 正面

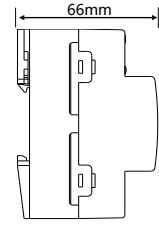


Figure 3. Dimensions - Side View
图 3. 尺寸图 - 侧面

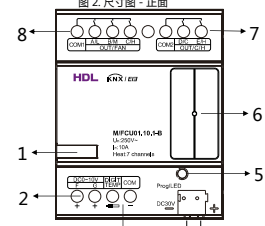


Figure 4. Components
图 4. 部件图



Figure 5. 2.5m Digital Temperature Sensor
图 5. 2.5米数字温度传感器

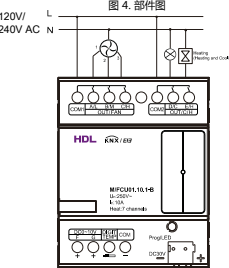


Figure 6 / 图 6

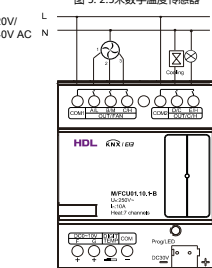


Figure 7 / 图 7

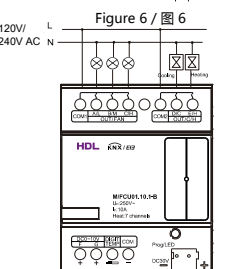


Figure 8 / 图 8

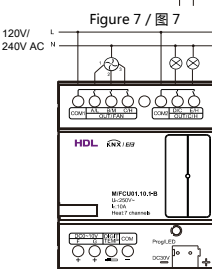


Figure 9 / 图 9

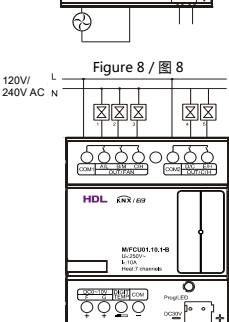


Figure 10 / 图 10

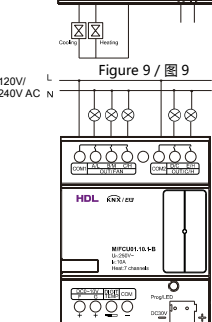


Figure 11 / 图 11

Figure 6 - 11. Wiring
图 6 - 11. 接线图

Technical Data

Basic Parameters

Working voltage	21~30V DC Class 2
Working current	20mA /30V DC
Input voltage	120V/240V AC(50/60Hz)
Communication	KNX
Detecting temperature range	-30°C~+100°C
Temperature sensor	2.5m Digital Temperature Sensor (18B20)
Communication	KNX
Output terminal	Line in, line out cable for each channel 2.5-4mm ²
Output channel	5CH/10A
0-10V output	2CH/10mA
Cable diameter of KNX terminal	0.6 - 0.8mm
Electrical life time	>100000
Mechanical life time	>1000000

External Environment

Working temperature	-5°C~45°C
Working relative humidity	≤90%
Storage temperature	-20°C~60°C
Storage relative humidity	≤93%

Specifications

Dimensions	90mm×72mm×66mm
Net weight	310g
Housing material	Frame-retardant nylon
Installation	35mm DIN rail installation (See Figure 12 - 14)
Protection rating (Compliant with EN 60529)	IP20

Name and Content of Hazardous Substances in Products

Components	Hazardous substances					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Chromium VI (Cr (VI))	Poly-brominated biphenyls (PBB)	Poly-brominated diphenyl ethers (PBDE)
Plastic	o	o	o	o	o	o
Hardware	o	o	o	o	-	-
Screw	o	o	o	x	-	-
Solder	x	o	o	o	-	-
PCB	x	o	o	o	o	o
IC	o	o	o	o	x	x

The symbol "-" indicates that the hazardous substance is not contained.
The symbol "o" indicates that the content of the hazardous substances in all the homogeneous materials of the component is below the limit requirement specified in the Standard IEC62321-2015.
The symbol "x" indicates that the content of the hazardous substance in at least one of the homogeneous materials of the part exceeds the limit requirement specified in the Standard IEC62321-2015.

KNX Cable Guide

KNX	KNX cable
-	Black
+	Red

技术参数

基本参数

工作电压	21~30V DC Class 2
工作电流	20mA/30V DC
输入电压	120V/240V AC (50/60Hz)
通信协议	KNX
检测温度范围	-30°C~+100°C
温度传感器	2.5米数字温度传感器 (18B20)
通信方式	KNX
输出端子	每路输入输出线 2.5-4mm ²
输出回路	5路/10A
0-10V输出	2路/10mA
KNX端子要求线径	0.6 - 0.8mm
电气寿命	> 100000
机械寿命	> 1000000

外部环境

工作温度	-5°C~45°C
工作相对湿度	≤90%
储存温度	-20°C~60°C
储存相对湿度	≤93%

产品规格

尺寸	90mm×72mm×66mm
净重	310g
外壳材料	阻燃尼龙
安装方式	35mm 丁导轨安装 (见图12-14)
防护级别 (符合 EN 60529)	IP20

产品中有害物质的名称及含量

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
塑胶组件	o	o	o	o	o	o
五金铜件	o	o	o	o	-	-
螺丝组件	o	o	o	x	-	-
焊锡	x	o	o	o	-	-
PCB组件	x	o	o	o	o	o
IC	o	o	o	o	x	x

- : 表示不含有该有害物质。
o : 表示该有害物质在该部件所有均质材料中的含量均在IEC62321-2015规定的限量要求以下。
x : 表示该有害物质至少在该部件的某一均质材料中的含量超出IEC62321-2015规定的限量要求。

KNX总线定义

KNX	KNX 电缆
-	黑
+	红



Figure 12 / 图 12

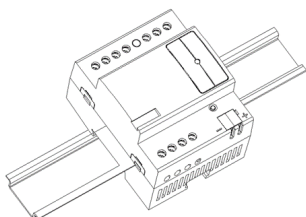


Figure 13 / 图 13

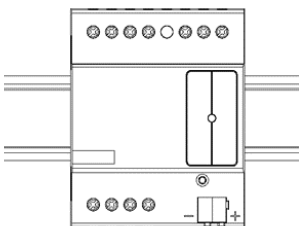


Figure 14 / 图 14

Figure 12 - 14. Installation
图 12 - 14. 安装图

技术支持

服务热线：020-85820195

(工作时间：9:00-12:00, 13:00-18:00, 星期一至星期五)

邮箱：kfb@hdlchina.com.cn

网址：http://www.hdlchina.com

Technical support

E-mail: support@hdlautomation.com

Website: https://www.hdlautomation.com