



P5 Kft.

2016

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## **FNIP-12xMZT**

### **12 Zone Programmable DIN-rail Thermostat**

rev 15.06.2016

What is the FNIP-12xMZT module for?

You can think of the FNIP-12xMZT as 12 separate programmable thermostats in one DIN rail mountable enclosure. The thermostats have no display, the temperatures can be retrieved, the setpoints and the program can be set via the module's website or TCP/IP commands. You no longer need bulky boxes on the walls. You can keep control of heating and cooling of your house from your phone.

How does the module work?

Temperatures are measured by temperature sensors connected to the inputs. A wide range of analog sensors used in the industry are supported. The outputs provide normally open relay contacts to turn on/off heating/cooling valves.

Each thermostat can be used either in heating or cooling mode. If you need an automatic thermostat that can control both heating and cooling at the same time without manually changing the mode that's also possible. In that case two output channels are needed for one thermostat, one to control the heating, the other to control the cooling. The second output channel must be taken away from another (the next) thermostat. This means the module will have one thermostat less in total.

Since the setpoints and the program is stored in the module your heating and cooling will stay running even if the network or main controller is down.



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## Main Features

- The unit sits discretely out of sight - no more bulky boxes on the walls
- 12 inputs for most analog temp sensor types: PT1000, PTC 1K-47K, NTC 1K-47K
- 12 NO relay outputs to control valves
- 12-24V power requirement
- Heating and cooling modes
- Custom programmable extra relay - ideal for boiler control
- Standalone operation - setpoint and times stored, decision made within the module
- Setpoint adjustable via TCP/IP
- Scheduled heating and cooling programs
- Outputs and temp inputs can also be used separately

## Configuration and Control

### Network and user settings

Default IP address: DHCP

Default user name: admin

Default password: futurenow

### Operation modes

There are four modes each channel can work in:

**Heating:** If the temperature drops below the setpoint by more than the hysteresis and the off time has expired then the output will turn on. For this Channel Mode the mode in Settings must be set to Single.



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**Cooling:** If the temperature goes above the setpoint by more than the hysteresis and the off time has expired then the output will turn on. For this Channel Mode the mode in Settings must be set to Single.

**Auto:** Combination of heating and cooling modes. This mode requires two outputs. Based on the temperature reading of the first channel the first (heating) output will be activated if it's too cold. If it's too warm the cooling relay on the next channel will turn on. For this mode the Channel Mode in Settings must be set to Dual.

**Independent:** The output and the input can be used independently. Sensor readings can be processed and the output relay can be turned on/off via the website and TCP/IP. For this mode the Channel Mode in Settings must be set to Independent.



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## FNIP-12xMZT

- Control
- Network
- Settings
- Schedule
- Users
- Firmware
- Logout

<p><b>Kitchen</b></p> <p>23.9°C</p> <p>Mode: Heat</p> <p>Setpoint: 26.2 °C</p> 	<p><b>Bedroom 3</b></p> <p>23.6°C</p> <p>Mode: Cool</p> <p>Setpoint: 25 °C</p> 
<p><b>Steam room</b></p> <p>62°C</p> <p>Mode: Off</p> <p>Setpoint: 20 °C</p> 	<p><b>Basement</b></p> <p>23.8°C</p> <p>Mode: Off</p> <p>Setpoint: 20 °C</p> 
<p><b>Outdoor</b></p> <p>9.6°C</p> <p>Mode: Off</p> <p>Setpoint: 20 °C</p> 	<p><b>Bathroom</b></p> <p>27.6°C</p> <p>Mode: Off</p> <p>Setpoint: 20 °C</p> 
<p><b>Channel7</b></p> <p>--°C</p> <p>Mode: Off</p> <p>Setpoint: 20 °C</p> 	<p><b>Channel8</b></p> <p>--°C</p> <p>Mode: Off</p> <p>Setpoint: 20 °C</p> 
<p><b>Channel9</b></p> <p>--°C</p> <p>Mode: Off</p> <p>Setpoint: 20 °C</p> 	<p><b>Channel10</b></p> <p>--°C</p> <p>Mode: Off</p> <p>Setpoint: 20 °C</p> 
<p><b>Channel11</b></p> <p>--°C</p> <p>Mode: Off</p> <p>Setpoint: 20 °C</p> 	<p><b>Channel12</b></p> <p>--°C</p> <p>Mode: Off</p> <p>Setpoint: 20 °C</p> 

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## Settings

**Channel Mode:** See above, depending on zone operation mode

**Calibration value** will be added to the measured temperature to compensate for offset error.

**Minimum ON/OFF time:** To avoid oscillation and take the thermal inertia of different heating/cooling methods into account there's a minimum time during which the status of the output won't change.

**Hysteresis:** To avoid oscillation there is a deadband between turn on and turn off temperatures.

**AUX relay** will be activated if one or more of outputs the AUX relay is bound to is on. It can be used to control the boiler.





## FNIP-12xMZT

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Labels:	Channel modes:	Calibration value:	Minimum off time:	Minimum on time:	Hysteresis:	Sensor type:
Kitchen	Single	-0.5 °C	0 : 0	0 : 0	0.4 °C	PT100
Bedroom 3	Single	0 °C	0 : 0	0 : 0	0 °C	NI1000/5000
Steam room	Indep.	0 °C	0 : 5	0 : 5	0.1 °C	PT500
Basement	Single	0 °C	0 : 5	0 : 5	0.1 °C	PT1000
Outdoor	Single	0 °C	0 : 5	0 : 5	0.1 °C	NTC2K2/3977
Bathroom	Single	0 °C	0 : 5	0 : 5	0.1 °C	NTC4K7/3977
Channel7	Indep.	0 °C	0 : 5	0 : 5	0.1 °C	NTC1K5/3528
Channel8	Indep.	0 °C	0 : 5	0 : 5	0.1 °C	NTC2K2/3977
Channel9	Indep.	0 °C	0 : 5	0 : 5	0.1 °C	NTC1K/3528
Channel10	Indep.	0 °C	0 : 5	0 : 5	0.1 °C	NTC4K7/3984
Channel11	Indep.	0 °C	0 : 5	0 : 5	0.1 °C	NI1000/6180
Channel12	Indep.	0 °C	0 : 5	0 : 5	0.1 °C	NI10000/5000

**Aux Relay is bound to:**

Kitchen  Bedroom 3  Steam room  Basement  Outdoor  Bathroom  Channel7  
 Channel8  Channel9  Channel10  Channel11  Channel12

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## Schedule



# FNIP-12xMZT

Control Network Settings **Schedule** Users Firmware Logout

Channel:  Schedule:

	Time:	Setpoint:	Apply to all	Apply to weekdays	Enabled
Monday:	<input type="text" value="7"/> : <input type="text" value="45"/>	<input type="text" value="21.1"/> °C	<input type="button" value="Apply"/>	<input type="button" value="Apply"/>	<input checked="" type="checkbox"/>
Tuesday:	<input type="text" value="8"/> : <input type="text" value="15"/>	<input type="text" value="15"/> °C	<input type="button" value="Apply"/>	<input type="button" value="Apply"/>	<input checked="" type="checkbox"/>
Wednesday:	<input type="text" value="8"/> : <input type="text" value="15"/>	<input type="text" value="15"/> °C	<input type="button" value="Apply"/>	<input type="button" value="Apply"/>	<input checked="" type="checkbox"/>
Thursday:	<input type="text" value="8"/> : <input type="text" value="15"/>	<input type="text" value="15"/> °C	<input type="button" value="Apply"/>	<input type="button" value="Apply"/>	<input checked="" type="checkbox"/>
Friday:	<input type="text" value="8"/> : <input type="text" value="15"/>	<input type="text" value="15"/> °C	<input type="button" value="Apply"/>	<input type="button" value="Apply"/>	<input checked="" type="checkbox"/>
Saturday:	<input type="text" value="10"/> : <input type="text" value="00"/>	<input type="text" value="15"/> °C	<input type="button" value="Apply"/>		<input checked="" type="checkbox"/>
Sunday:	<input type="text" value="11"/> : <input type="text" value="00"/>	<input type="text" value="15"/> °C	<input type="button" value="Apply"/>		<input checked="" type="checkbox"/>

Date:  :  :

Time:  :



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## **Specifications**

Power: 12-24V DC

Inputs: Analog temperature sensors NTC 1k-4.7K, NI 1000-10000, PT100-10000

Outputs: NO relay outputs max 230V/5A