

# User Manual

## inputCUE-W

Version 01

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***cue***

User Manual inputCUE-W

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# Table of Contents

	<b>Table of Contents</b> .....	<b>3</b>
<b>1.</b>	<b>Introduction</b> .....	<b>4</b>
	1.1. Overview .....	4
	1.2. Model .....	4
	1.3. Features .....	4
	1.4. Programming .....	4
<b>2.</b>	<b>Description</b> .....	<b>5</b>
<b>3.</b>	<b>Connecting</b> .....	<b>7</b>
<b>4.</b>	<b>Addressing</b> .....	<b>9</b>
<b>5.</b>	<b>Programming</b> .....	<b>10</b>
<b>6.</b>	<b>Specifications and Mechanical Drawings</b> .....	<b>11</b>
<b>7.</b>	<b>Software and Firmware License</b> .....	<b>12</b>

# 1. Introduction

## 1.1. Overview.....

The inputCUE-W connects up to eight contacts (for example wall switches) and one temperature sensor Pt1000 to a control system. The unit also has eight digital outputs suitable for connection of indication LEDs. The enclosure allows simple installation into standard European electrical wall box. Addressing of the unit is set by DIP switches and CUEwire (RS-485) activity is indicated on LED placed on PCB.

## 1.2. Model.....

Model	Product code	Description
inputCUE-W	CS0334	The inputCUE-W connects up to eight contacts and temperature sensor Pt1000 to a control system.

## 1.3. Features.....

- 8 x inputs for potential free contacts
- 8 x outputs suitable for connection of indication LEDs (programmable brightness) or for driving the equivalent of one TTL logic gate
- Input for temperature sensor Pt1000
- System connection by CUEwire
- Small enclosure
- Installation into standard European electrical wall box.

## 1.4. Programming.....

inputCUE-W is programmed using **Cue Director XPL** programming tool.

## 2. Description

The enclosure of inputCUE-W allows simple installation into standard European electrical wall box. Inputs and outputs are connected via 16-pin connector JST, type PHDR-16VS.

Every input has 2 terminals (pins on input connector), one terminal is input signal, second terminal is input common (GND).

Outputs are connected via the same type of 16-pin connector. Every output has 2 terminals, one terminal is output signal (LED's cathode), second terminal is output common (LED anodes).

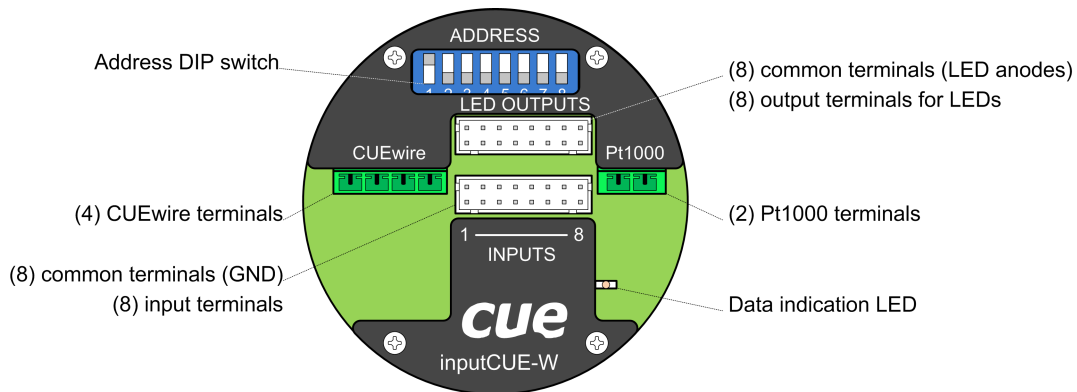
Two sets of 16-pin connector with 400 mm cables are delivered with this unit. Every input and output has its unique colour of cable (see colour table below).

Temperature sensor Pt1000 (not delivered with this unit) is connected via 2-pin terminal (Phoenix 3,5 mm).

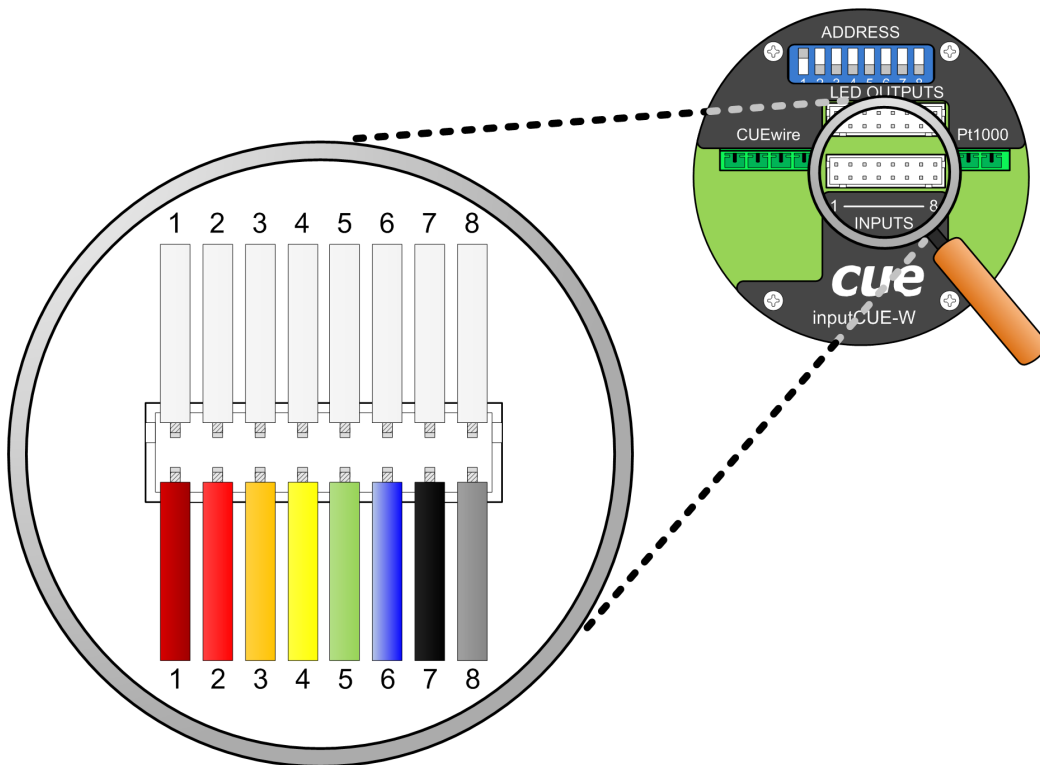
Standard CUEwire is connected via 4-pin terminal (Phoenix 3,5 mm) and it includes power supply 24 VDC and RS-485 data.

The address DIP switch sets ADDRESS of the inputCUE in the range 0 to 207.

Data indication LED indicates data activity on the CUEwire. This activity is indicated also if any of the inputs is switched. This feature allows to test all inputs without connection to a control unit, just with power supply connected.

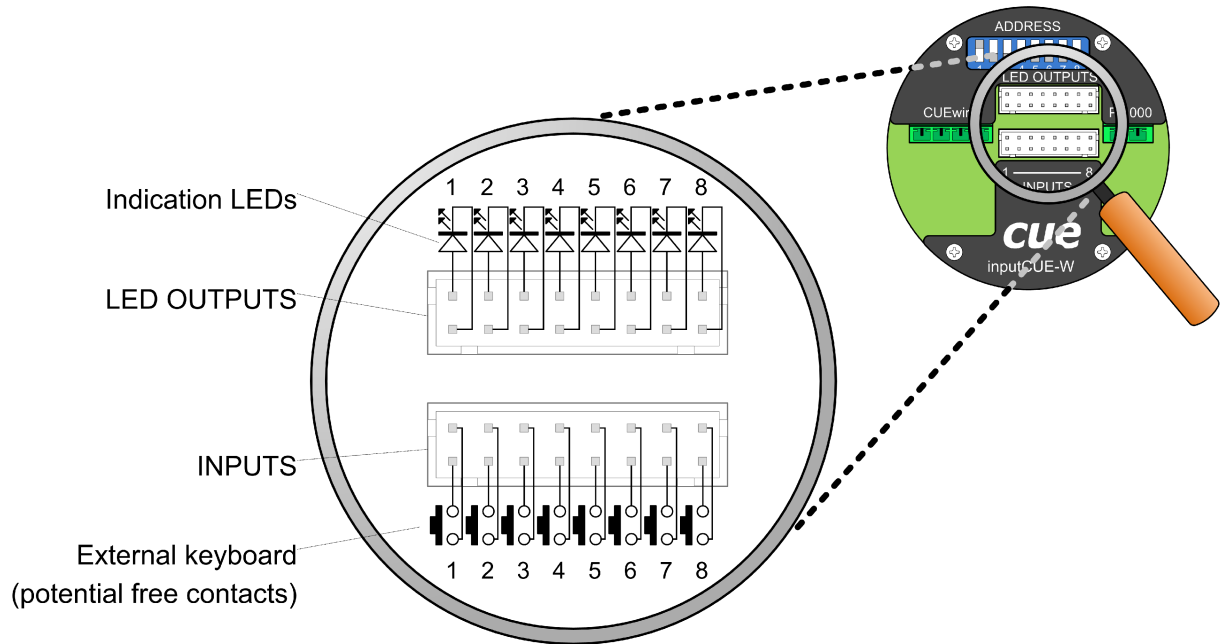


Input and output connectors wire colours		
Input (output) number	Input (output) wire colour	Common wire colour
1	Brown	White
2	Red	White
3	Orange	White
4	Yellow	White
5	Green	White
6	Blue	White
7	Black	White
8	Gray	White

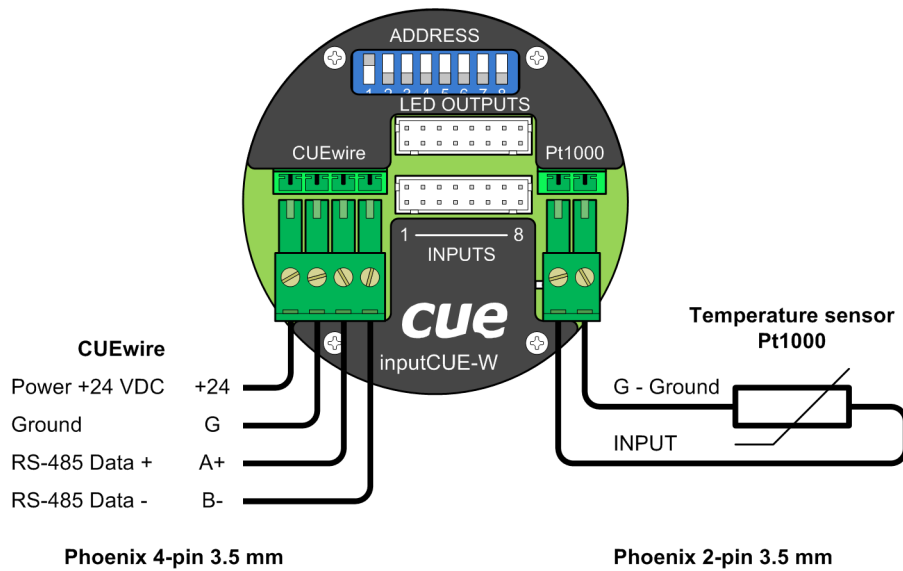


# 3. Connecting

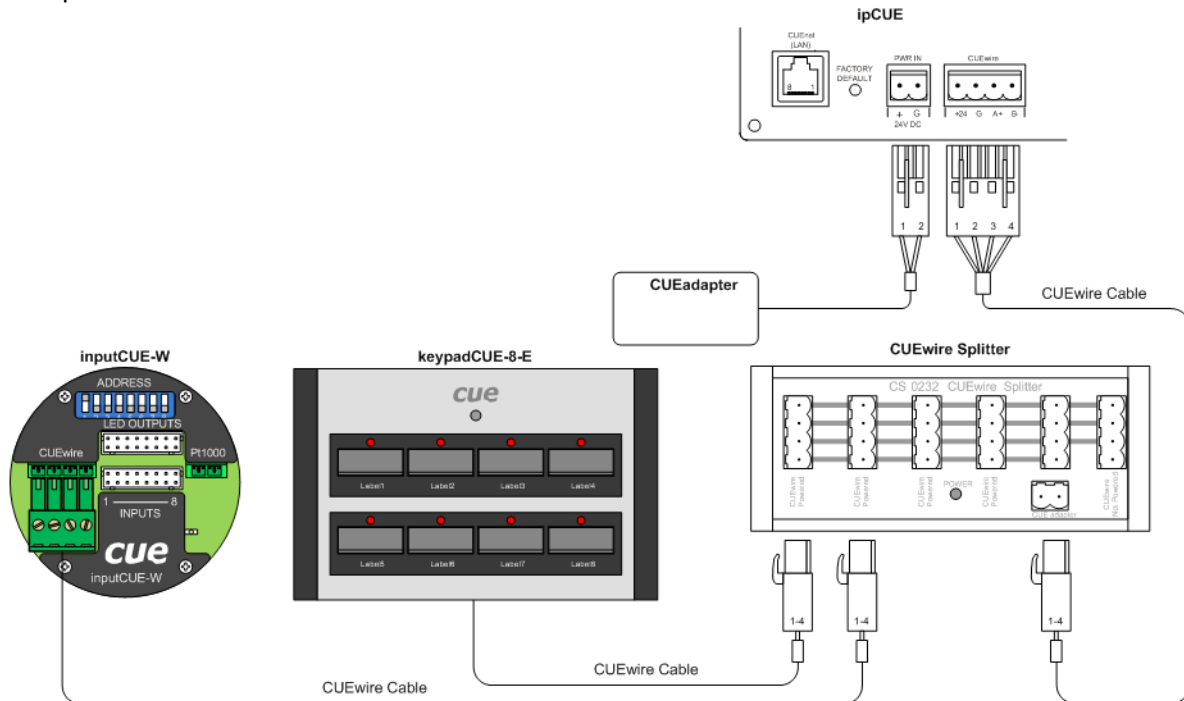
A connection of the external keyboard is described in the picture below.



A connection of CUEwire connector and external temperature sensor Pt1000 is shown in the following picture.



## Example of a connection



**Note 1:** Pt1000 temperature sensor input is calibrated in the factory with a short cable. If connection cable of Pt1000 sensor is long, take into consideration that the impedance of connection cable has influence on measured value. Every 3.9 Ohm of impedance of cable increases measured value by 1 Celsius degree.

**Note 2:** If you want to use outputs as logic (TTL output) instead of driving indication LEDs, don't use common wires on the output connector. This wires are not connected to ground, but to power source for LEDs. You can use common terminals of input connector or GND terminal on CUEwire connector for connection of ground in this case. The output is able to drive the equivalent of one standard TTL logic gate.



# 4. Addressing


The ADDRESS of the inputCUE-W can be set in the range **0 to 207**. Default ADDRESS is 1.

The BUTTON\_ID transmitted by the inputCUE-W is the LINK number used in the programming for button identification. The BUTTON\_LED\_ID is LED identification for *ButtonLed...* commands. Both values depend on the Input (Output) Number and on the ADDRESS too. BUTTON\_ID is calculated according to the formulas described below.

$$\text{BUTTON\_ID} = (32 * \text{ADDRESS}) + \text{Input Number}$$

$$\text{BUTTON\_LED\_ID} = (32 * \text{ADDRESS}) + \text{Output Number}$$

The ADDRESS of the inputCUE-W is binary coded by DIP switch.

Switch view	Switch nr.	Function
	SW1	ADDRESS bit 0
	SW2	ADDRESS bit 1
	SW3	ADDRESS bit 2
	SW4	ADDRESS bit 3
	SW5	ADDRESS bit 4
	SW6	ADDRESS bit 5
	SW7	ADDRESS bit 6
	SW8	ADDRESS bit 7

ADDRESS	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
...								
207	ON	ON	ON	ON	OFF	OFF	ON	ON

In the table below Button ID range for some addresses is shown.

ADDRESS	BUTTON_ID range = BUTTON_LED_ID range	
0	1	8
1	33	40
2	65	72
...	...	...
207	6625	6632

## 5. Programming

From the programming point of view, inputCUE-W is fully compatible with units keypadCUE-8-E and keypadCUE-8-L. You can use these units instead of inputCUE-W in configuration window in Cue Director XPL.

For easy programming of temperature sensor input (Pt1000), you can use the module CUE\_Temperature\_Sensors.csm. You can find it on the CUE Application CD in folder XPL Drivers and Modules. This module is also compatible with temperature sensors in sensorCUE and sensorCUE-W.

This module has one function:

**Public Function GetTemperature (PanelAddress As Word, ByRef TemperatureAsText As String) As Long**

*GetTemperature* returns current temperature measured in 1/10 degrees of Celsius as long value. Returned values are -400 (-40 °C) to 1200 (+120 °C). The first parameter is the panel address of inputCUE-W, the second parameter is string, where temperature value will be stored as string ("-40.0" to "+120.0")

### Example:

Declarations:

```
Public TemperatureInt As Integer
```

```
Public TemperatureString As String *10
```

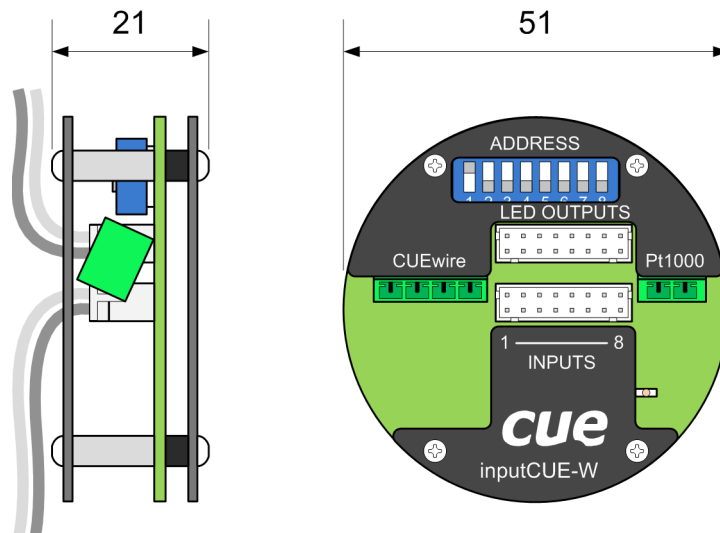
Program:

```
TemperatureInt = GetTemperature(38, TemperatureString)
```

This command has assigned the temperature from inputCUE-W (with the address 38) to the *TemperatureInt* variable. If current temperature is for example +23.5 °C, in *TemperatureInt* variable there will be value 235. In string *TemperatureString* there will be value "+23.5".

## 6. Specifications and Mechanical Drawings

Inputs.....	(8) potential free contacts, 16-pin connector JST, type PHDR-16VS
Outputs.....	(8) outputs for LED's, 16-pin connector JST, type PHDR-16VS
Outputs current.....	0 - 5 mA, programmable in 16 steps (PWM)
Temperature sensor input type.....	Pt1000
Temperature measurement range.....	-40°C to +120°C
Temperature measurement precision.....	±1°C in range 0°C to +50°C, ±2°C in range -40°C to +120°C
System connection.....	CUEwire (RS-485), 4-pin connector Phoenix 3.5 mm
Power supply.....	24 VDC (+/- 20%), 2 W
Enclosure.....	Plastic
Dimensions.....	Diameter 51 mm, depth 21 mm (plus IO cables)
Weight.....	0.1 kg / 0.2 lb
Operating environment.....	Temperature 10° to 40° C Humidity 10% to 90% non-condensing
Supplied accessories.....	Two cables (for input and output) with 16-pin connector JST, type PHDR-16VS and 400 mm long wires 4-pin Phoenix 3.5 mm connector for CUEwire 2-pin Phoenix 3.5 mm connector for Pt1000 input



All dimensions are in **mm**.

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**Notes**

Lined area for taking notes, consisting of numerous horizontal lines.

