



WV478-2000

# ULTRA SLIMPAK® II WV478

## DC Powered Frequency Input Isolating Signal Conditioner

High Accuracy Signal Conditioner with an  
Isolated DC Voltage or Current Output



- Lower Power Requirements with SmartPower
- Improved Accuracy
- Bussed Power with Plug-in Power Clips
- Removable Terminals for Easy Service

- RoHS Compliant
- Touch Cal for Best Stability and Accuracy
- DIP Switch Configuration

### Description

The Ultra SlimPak II is an exciting new line of isolating signal conditioners from Action Instruments with greater accuracy and better stability than virtually any other signal conditioners on the market today. The Ultra SlimPak II features Smart Power, which eliminates wasted power for low loop resistance loads in the current output mode.

The WV478 accepts a frequency of up to 10kHz, with a minimum input span of 2Hz. The input amplitude can range from 150mVp to 150Vrms.

### Smart Power

The Ultra SlimPak II uses Smart Power to control its output supply. Smart Power automatically adjusts the the voltage to drive the output loop to the required current. A low impedance current loop will subsequently require less voltage than a loop with higher impedance. Previous designs provided only a single supply at the highest voltage required to drive the highest impedance load. Using Smart Power results in power savings and reduces the operating temperature of the signal conditioner.

### Enhanced LED Diagnostics

Other than when executing the pushbutton calibration routine, the LEDs blink under the following conditions:

#### GREEN:

Flashes at 2Hz when the input is under range.  
Flashes at 8Hz when the input is over range.

#### RED:

Flashes at 2Hz when the output is under range.  
Flashes at 8Hz when the output is over range.

An Under Range condition exists when the signal is lower than the operational low value minus 6.25% of the operational span. An Over Range condition exists when the signal is higher than the operational high value plus 6.25% of the operational span.

A voltage output short circuit may cause an under range condition (RED blinking at 2Hz rate). A current output open circuit may cause an over range condition (RED blinking at an 8Hz rate).

There could be two or more LEDs blinking at the same time, which means the module has more than one error condition. Only when all error conditions have been removed, will the LEDs be back to normal (Green ON, Red and Yellow Off).

Eurotherm®

by Schneider Electric

## Configuring Modules

Unless otherwise specified, the factory presets the Model WV478 as follows:

Input: Frequency  
 Range: 0-1000Hz  
 Sensitivity: Low (set at 1Vrms)  
 Output: DC Current  
 Range: 4-20mA  
 Remote Cal: Off

1. For other ranges, refer to the SWITCH SETTINGS table. Reconfigure switches S1 and S2 for the desired input type and range.
2. Set position 1 of S1 to ON if a WVC16 will be utilized and remote calibration capability is desired.
3. Set position 2 and 3 of S1 for the desired output type.
4. Set position 4 of S1 to ON for reverse output operation.
5. Set position 1 of S2 for the desired input sensitivity.

It is also possible to remotely select the setpoints using an Ethernet connection and the optional WVC16 WebView Communications Interface module.

## Calibration

See the calibration flowchart in Figure 3. The complete calibration procedure is contained in the Installation & Calibration Instructions document, which is available on our website ([www.actionio.com](http://www.actionio.com)). You can also obtain it by telephoning Action technical support (703-669-1318).

Note that Custom Calibration (option C620) is available from the factory (settings **MUST** be within the units specifications). For a C620, specify the following:

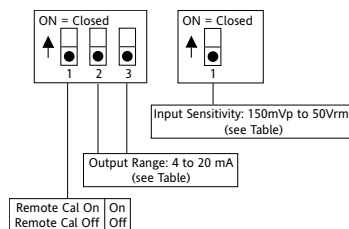
- a) Input Frequency Range (for example: 0 to 5000Hz).
- b) Input Amplitude (for example: 2.5 Volts, Peak).
- c) Output Type and Range (for example: 4 to 20mA).

Function	S1		
	1	2	3
Remote Cal	■	-	-
Output			
0 to 10V	-	■	■
0 to 20mA	-		■
4 to 20mA	-		

Key: ■ = 1 = ON or Closed; - = n/a

Function	S2
Input Sensitivity	1
High Range (500mVp to 150Vrms)	
Low Range (150mVp to 50Vrms)	■

Key: ■ = 1 = ON or Closed; - = n/a



Default Switch Settings

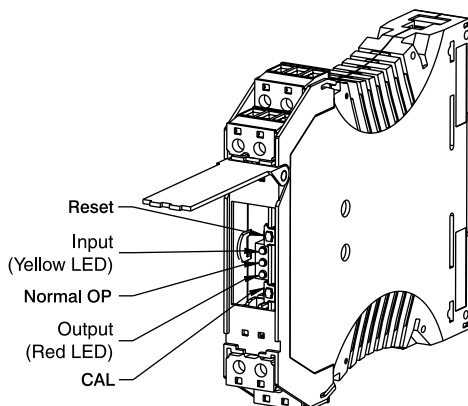
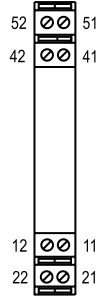


Figure 1: Switch Settings



Pin	Description
11	DC Power (+)
12	DC Power (-)
21	DC Power (+)
22	DC Power (-)
41	Input (+)
42	Input (-)
51	Output (+)
52	Output (-)

Figure 2: Wiring Connections

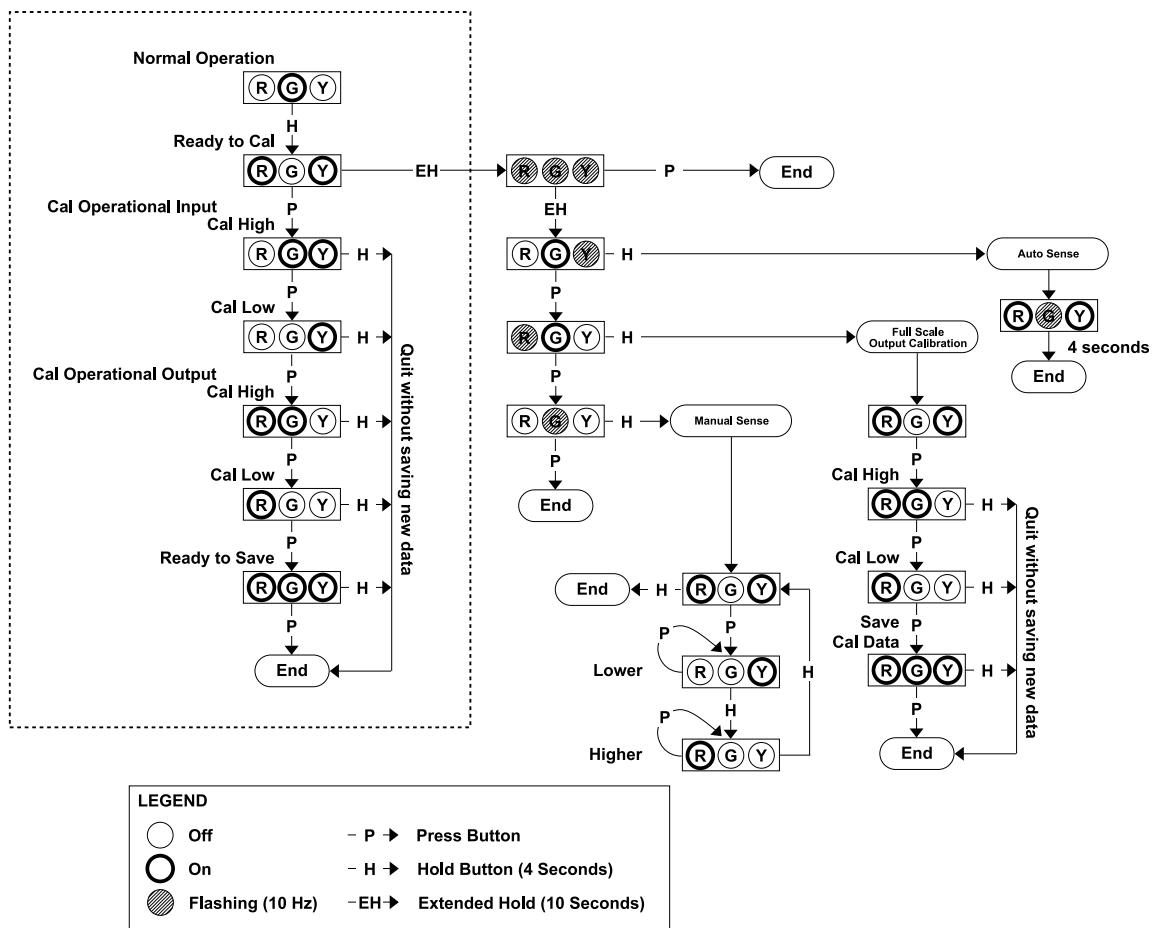


Figure 3: Calibration Flowchart

## Specifications

### Input:

**Frequency Input Range:** 0 to 10kHz

**Minimum Input Span:** 2Hz

**Amplitude (switch selectable):**

Low Range: 150mVp to 50Vrms

High Range: 500mVp to 150Vrms

### Output:

**Voltage:** 0 to 10VDC;

**Source Impedance:** 10 ohms

**Drive:** 10mA

**Current:** 0 to 20mA

**Source Impedance:** >100k ohms

**Compliance:** 20V@20mA (1k ohms max)

### Output Accuracy:

±0.05% of full scale local range

### Response Time:

100mSec + 3 input cycles (10-90%) typical

### Stability:

±100ppm of full scale/°C (±0.01%/°C)

### Common Mode Rejection:

60Hz: >90dB

DC: >120dB

### Isolation:

Input to Output to Power: 1800VDC

### ESD Susceptibility:

Capable of meeting IEC801-2 level 3 (8kV)

### Power:

9 to 30VDC

1W typical, 2W maximum

### Host Module Interface:

IR Link

### Size:

DIN rail case – refer to Dimensions drawing

### Temperature Range:

Operating: 0°C to 60°C (32°F to 140°F)

Storage: -25°C to 85°C (-13°F to 185°F)

### Humidity Range:

Operating: 15% to 95% RHNC @ 45°C

Storage: 90% RHNC @60°C for 24 hrs

### Agency Approvals (EMC & Safety):

UL recognized per standard UL508

(File No.E99775)

CE Conformance per EMC directive 89/336/EEC and Low Voltage

73/23/EEC (Input < 75VDC, only).

RoHS Compliant

Note that detailed installation instructions are available on our website.

## Ordering Information

Specify:

1. Model:  
**WV478-2000**
2. Optional Custom Factory Calibration (specify **C620**, see required settings under "Calibration, page 2).
3. Accessories.

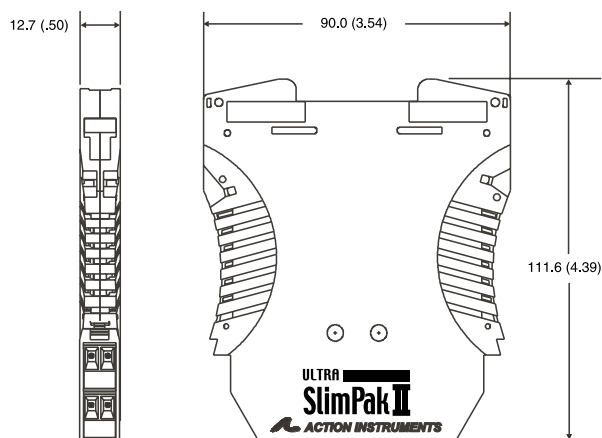
## Accessories

All WV Series modules will mount on standard TS35 (model MD03) DIN rail. In addition, the following accessories are available:

<b>WVC16</b>	Communications Interface
<b>MD03</b>	TS35 x 7.5 DIN Rail (2 meters)
<b>WV905</b>	24VDC Power Supply (0.5 Amp)
<b>H910</b>	24VDC Power Supply (1 Amp)
<b>H915</b>	24VDC Power Supply (2.3 Amp)
<b>MB03</b>	End Bracket for MD03
<b>C650</b>	Utility software for WVC16

## Dimensions

Dimensions are in millimeters (inches)



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## Factory Assistance

For additional information on calibration, operation and installation contact our Technical Services Group:

**703-724-7300**

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