

Configuring Modules

Unless otherwise specified, the factory presets the Model WV118 as follows:

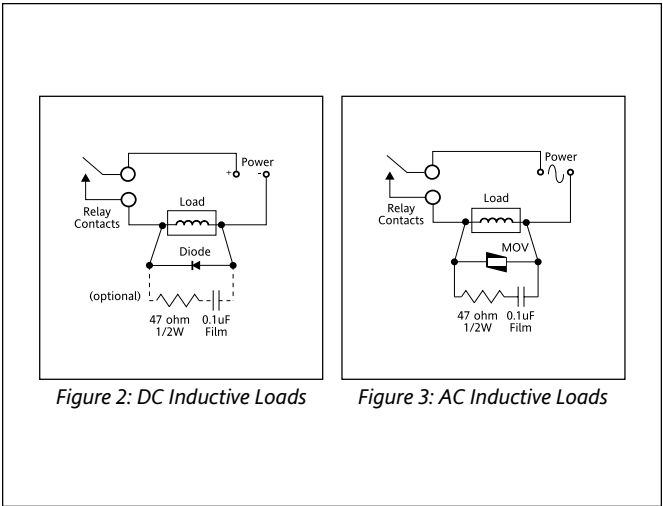
- Input: Pt100
- Range: -200°C to 600°C
- Output: Dual, SPDT
- Trip: A: HI, B: LO
- Failsafe: No
- Deadband: A, B: minimum
- Remote Cal: No

- 1. For other ranges, refer to the SWITCH SETTINGS table (see Figure 4). Reconfigure switches S1 and S2 for the desired input type and range.
- 2. Set position 1 of S2 to ON if a WVC16 will be utilized and remote calibration capability is desired.
- 3. Set position 2 and 3 of S2 to ON for a Hi trip setpoint or to OFF for a Low trip setpoint.
- 4. Set position 4 of S2 to ON for failsafe operation (e.g. alarm trips upon power failure) or OFF for non-failsafe operation (-2000 only).

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

Relay Protection and EMI Suppression

When switching inductive loads, maximum relay life and transient EMI suppression is achieved using external protection (see Figures 2 & 3). Place all protection devices directly across the load and minimize all lead lengths. For AC inductive loads, place a properly-rated MOV across the load in parallel with a series RC snubber. Use a 0.01 to 0.1mF pulse film capacitor (foil polypropylene recommended) of sufficient voltage, and a 47ohm, 1/2W carbon resistor. For DC inductive loads, place a diode across the load (PRV > DC supply, 1N4006 recommended) with (+) to cathode and (-) to anode (the RC snubber is an optional enhancement).



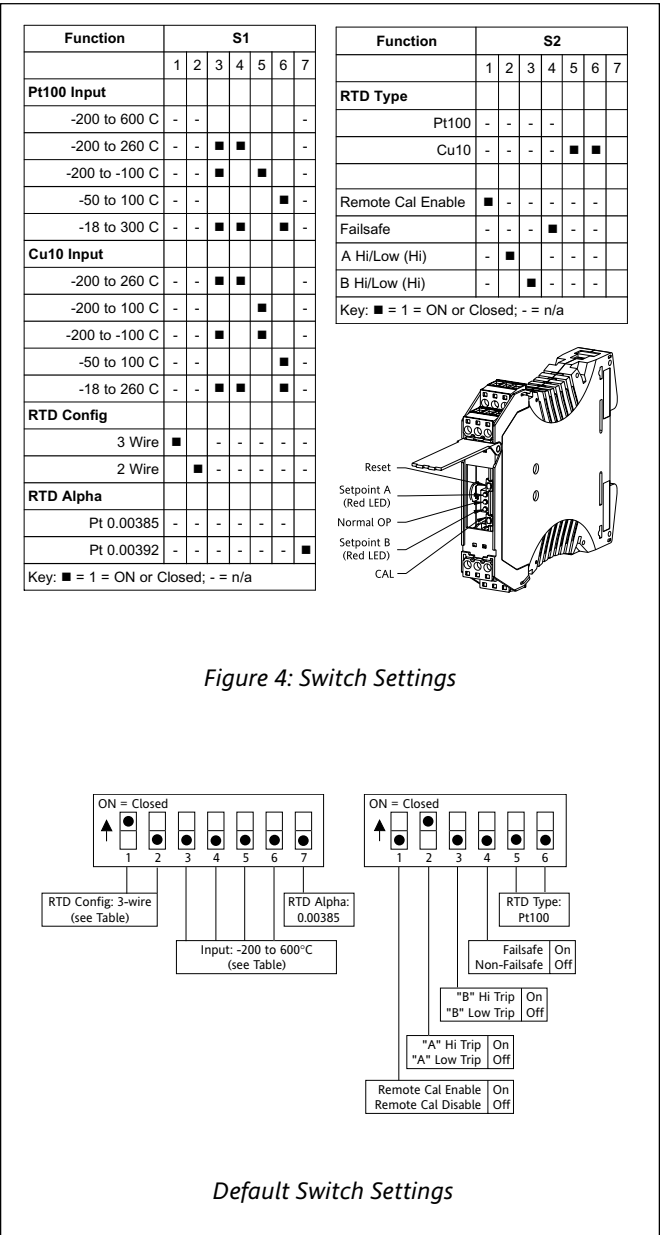
Calibration

See the calibration flowchart in Figure 6. The complete calibration procedure is contained in the Installation & Calibration Instructions document, which is available on our website (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) RTD type and temperature range.
- b) Setpoint A trip point and reset point.
- c) Setpoint B trip point and reset point.
- d) Failsafe (ON/OFF)

Note that if a deadband entry is not specified, the default setting of 0.25% will be used.



ON = Closed

RTD Config: 3-wire (see Table)

RTD Alpha: 0.00385

Input: -200 to 600°C (see Table)

ON = Closed

RTD Type: Pt100

Failsafe Non-Failsafe: On Off

"B" Hi Trip: On Off

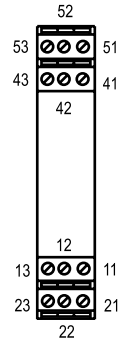
"B" Low Trip: Off

"A" Hi Trip: On Off

"A" Low Trip: Off

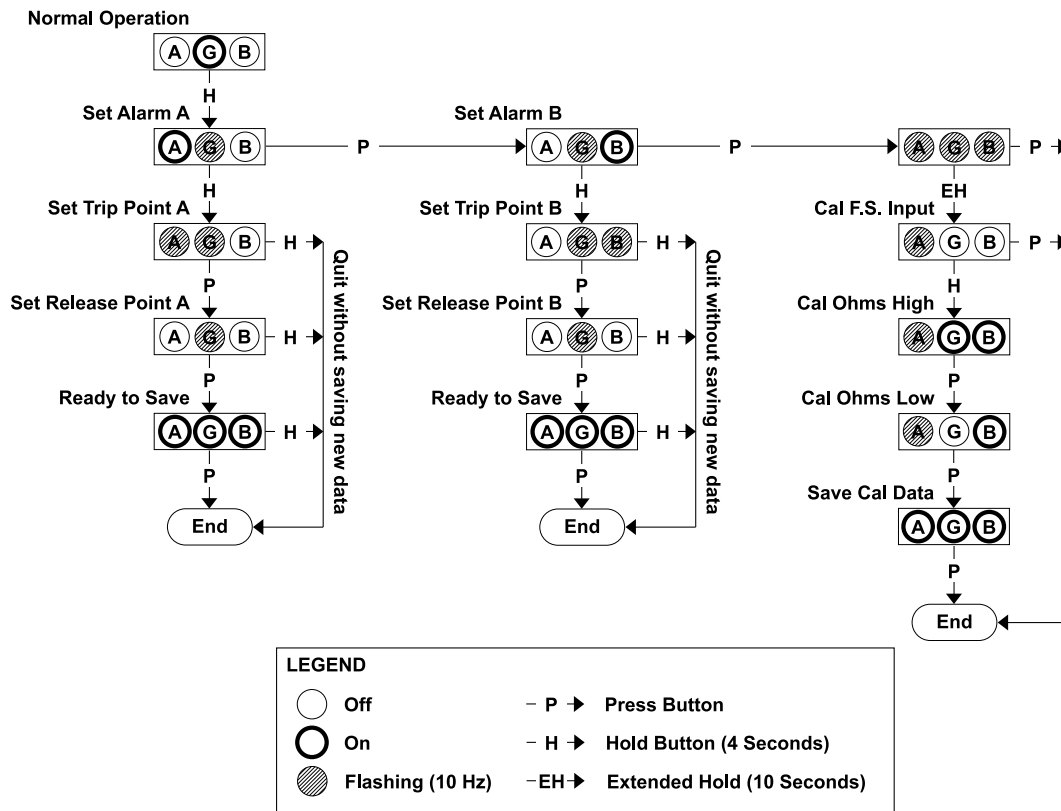
Remote Cal Enable: On Off

Remote Cal Disable: On Off



Pin	Description
11	N.O. Relay B
12	Com. Relay B
13	N.C. Relay B
21	DC Power (+)
22	DC Power (-)
23	No Connection
41	RTD Input (+)
42	RTD Input (-)
43	RTD Return
51	N.O. Relay A
52	Com. Relay A
53	N.C. Relay A

Figure 5: Wiring Connections



NOTE:
To reload factory calibration data, hold down the button while the unit powers up. The green LED will flash 10 times and then the red LED will begin to flash. Release the button once the red LED begins flashing and the factory calibration data will be reloaded.

Figure 6: Calibration Flowchart

Specifications

Inputs:

Sensor Types: Pt100 0.00385, Pt100 0.00392, Cu10

Sensor Connection: 2-wire or 3-wire

Ranges:

Pt100 RTDs:

°C	°F	alpha	range no.
-200 to 600	-32 to 1112	0.00385	1
-200 to 260	-328 to 500	0.00385	2
-200 to -100	-328 to -148	0.00385	3
-50 to 100	-58 to 212	0.00385	4
-18 to 300	0 to 572	0.00385	5
-200 to 600	-328 to 1112	0.00392	6
-200 to 260	-328 to 500	0.00392	7
-200 to -100	-328 to -148	0.00392	8
-50 to 100	-58 to 122	0.00392	9
-18 to 300	0 to 572	0.00392	10

Cu10 RTDs:

°C	°F	range no.
-200 to 260	-328 to 500	11
-200 to 100	-328 to 212	12
-200 to -100	-328 to -148	13
-50 to 100	-58 to 212	14
-18 to 260	0 to 500	15

RTD Excitation:

Pt100: 0.45mA, max.; Cu10: 5.0mA, max.

Lead Wire Resistance:

40% of the base sensor resistance maximum or 100 ohms (whichever is less)

Lead Wire Effect:

Changing from 0 ohm lead resistance (each lead) to maximum allowed lead resistance: Error <1% of largest span PT and Cu ranges; -200 to 600°C for Pt and -200 to 260°C for Cu.

Pushbutton Adjustment: Effective zero offset: >95%

(Inputs >10mV): Effective span turn down: >95%

Local Range Selection: By DIP switch

Response Time:

Dynamic Deadband: Relay status will change when proper setpoint/process condition exists for 100mSec.

Normal Mode: <250mSec (analog filtering)

Setpoint Effectivity:

Setpoints are adjustable (by pushbutton) over 100% of the selected input span

Repeatability: $\pm 0.05\%$ of FS, $\pm 1^\circ\text{C}$ (constant temp)

Relay Contacts: 2 SPDT (2 form C) Relays, 1 relay per setpoint

Current rating (general use): 120VAC: 5A; 240VAC: 2A; 28VDC: 5A

Material: Gold flash over silver alloy

Electrical Life: 10^5 operations at rated load

Reset Switch:

For unlatching the relay once the process is no longer in the alarm state (WV118-2001 only).

Stability: $\pm 100\text{ppm}$ of full scale/ $^\circ\text{C}$ ($\pm 0.01\%/^\circ\text{C}$)

Common Mode Rejection: 120dB @ DC, >90dB @ 60Hz, or better

Isolation: >1800VDC or peak AC between input, output and power.

ESD Susceptibility: Capable of meeting IEC 801-2 level 3 (8kV)

Humidity (non-condensing):

Operating: 15 to 95% RH (@45°C)

Soak: 90% RH for 24hrs (@60°C)

Temperature:

Operating: 0 to 60°C

Storage: -25 to +85°C

Power: 9 to 30VDC, 1.0W typical, 2.0W max

Host Module Interface: IR link, same specs as Phase 1 modules

Size: DIN rail case – refer to Dimensions drawing

Environmental:

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

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

Operating Humidity (non-condensing): 15% to 95%RH at 45°C

Storage Humidity: 90%RH at 60°C for 24 hours

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:

- Model:
WV118-2000 (non-latching) or
WV118-2001 (latching)
- Optional Custom Factory Calibration (specify **C620**, see required settings under "Calibration, page 2).
- Accessories.

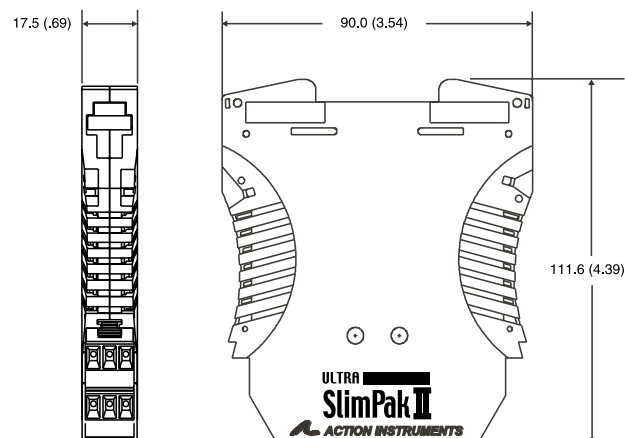
Accessories

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

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

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