

Low-Cost Analog Signal Conditioning

WRC's SmartMux™, SmartMux-Lite™, SmartMux-Plus™ and SmartPMux™ remote adapters all use 1781-7B and/or WRC7 series of analog I/O modules for signal conditioning. The 1781-7B modules provide cold-junction compensation; filtering; provide isolated sense currents; isolation; and amplification of the field signal to a standard 0-10 Vdc logic signal.

Many applications do not require all of these features, especially point-to-point isolation. WRC7 Series of analog signal conditioning modules provide differential, signal conditioning in a manner which is compatible with WRC's SmartMux and SmartMux-Lite, SmartMux-Plus and SmartPMux.



Common Specifications:

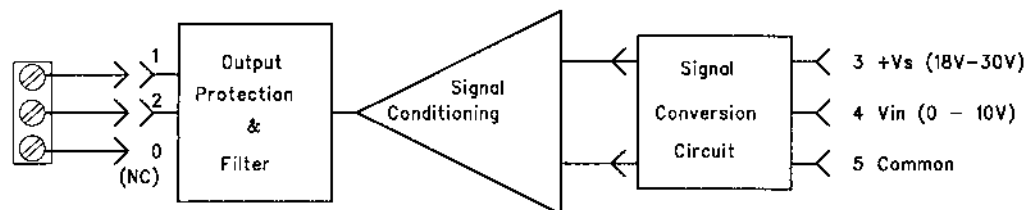
- Package: 0.6" x 1.7" x 1.25" blue module case
- Pin-out: per standard/slim modules
- Power: +24Vdc +/- 10%
- Isolation: when used with WRC SmartMux products, 60 V channel to channel; 1500 V channel to network
- Common Mode Rejection: 120 dB or better
- Normal Mode Rejection: 60 dB
- Accuracy: 0.2%
- Logic side signal: 0 - 10 Vdc
- Bandwidth: >20 KHz

WRC7 SERIES

WRC7 Model	+ V DC Current
WRC7-30	25 mA
WRC7-31	25 mA
WRC7-32	20 mA
1781-7-34	25 mA
1781-7-35	60 mA
WRC7-36	25 mA
WRC7-39	50 mA

WRC7-39: mA Output Module

- WRC7-39-01 4 - 20 mA
- WRC7-39-02 0 - 20 mA

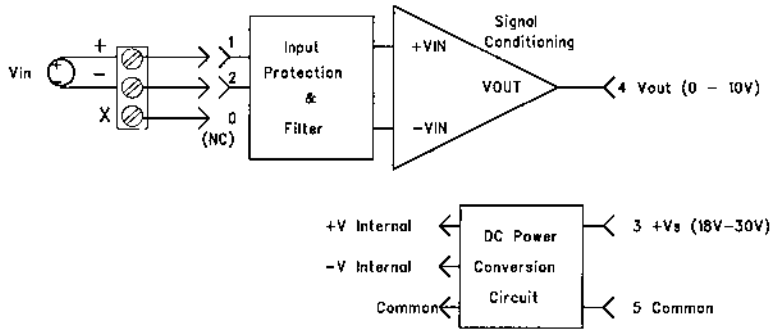


Output Module	WRC7-39-01	WRC7-39-02
Output Configuration	2 wire (+&-)	2 wire (+&-)
Output Current Range	4 - 20 mA	0 - 20 mA
***Output Protection	120 VAC	120 VAC
Output Power Avail.	300 mW	300 mW
**Output Accuracy	+/- 0.2%	+/- 0.2%
**Non-Linearity	+/- 0.02%	+/- 0.02%
**Stability	100 ppm/C	100 ppm/C
Output Compliance Voltage Limit	15 V	15 V
Input Voltage Range	0 to 10 V	0 to 10 V
Input Resistance	>10 MΩ	>10 MΩ

Notes: * Typical @ 25C
 ** (of Span)
 *** Hi to Lo: 0V Lo to GND

WRC7-30/31: Voltage Input Module

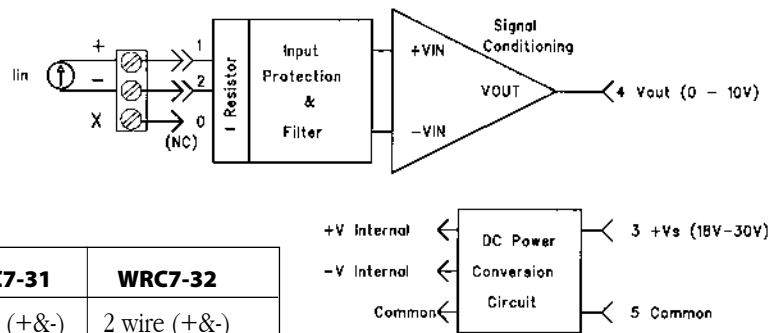
- WRC7-30-02 0-100 mV
- WRC7-30-03 0-1 V
- WRC7-30-05 1-5 V
- WRC7-31-01 0-10 V
- WRC7-31-04 0-5 V
- WRC7-30-08 +/- 1 V
- WRC7-31-02 +/- 5 V
- WRC7-31-03 +/- 10 V



WRC7-32: mA Input Module

for externally powered field transmitters

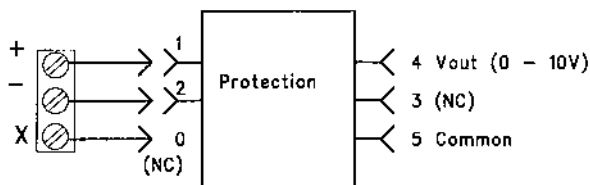
- WRC7-32-01 4-20 mA
- WRC7-32-02 0-20 mA

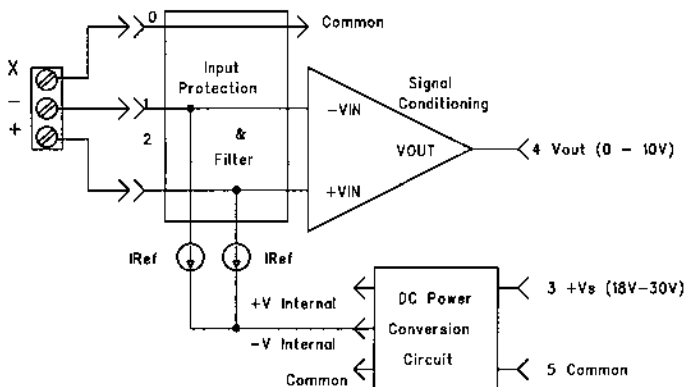


Input Module	WRC7-30	WRC7-31	WRC7-32
Input Configuration	2 wire (+&-)	2 wire (+&-)	2 wire (+&-)
Input Resistance			
Normal	1M Ω	1M Ω	250 Ω
Power Off	1M Ω	1M Ω	250 Ω
Overload	1M Ω	1M Ω	250 Ω
Input Protection			
Normal Mode	120 Vrms	120 Vrms	44 mA
Common Mode	120 Vrms	120 Vrms	120 Vrms
Output Voltage Range	0 to 10 V	0 to 10 V	0 to 10 V
Output Resistance	<1 Ω	<1 Ω	<1 Ω
Output Protection	Cont. Short	Cont. Short	Cont. Short
Output Current Limit	15mA	15 mA	15 mA
**Accuracy	+/-0.2%	+/-0.2%	+/-0.2%
** Non-Linearity	+/- 0.02%	+/- 0.02%	+/- 0.02%
** Stability	100 ppm/C	100 ppm/C	100 ppm/C
Frequency Response	4 Hz	4 Hz	4 Hz

Notes: * Typical @ 25C
 ** (of Span)
 *** Hi to Lo: 0 V Lo to GND

WRC7-1367: 0-10 V Input or Output Module (pass through with signal clamping)





WRC7-34: RTD Input Module

- WRC7-34-01 ±100°C Pt
- WRC7-34-02 0-100°C Pt
- WRC7-34-03 0-200°C Pt
- WRC7-34-04 0-600°C Pt
- WRC7-34-N-01 0-300°C Ni
- WRC7-34-C-01 0-120°C Cu

WRC7-36: Potentiometer Input Module

- WRC7-36-01 0- 100 Ω
- WRC7-36-02 0- 500 Ω
- WRC7-36-03 0- 1 KΩ
- WRC7-36-04 0 - 10 KΩ
- WRC7-39-02 0 - 20 mA

WRC7-57-1: Thermister Input Module

- 10K ohm NI

Sourcing Input Module	WRC7-34	WRC7-36	WRC7-57
Input Resistance	1 MΩ	1 MΩ	1 MΩ
Excitation Current			
+Input	0.25 mA	0.25 mA	0.25 mA
-Input	0.25 mA	0.25 mA	0.25 mA
Lead resistance effect			
Equal Resistance +&- Lead	0.01 Ω/Ω	0.01 Ω/Ω	0.01 Ω/Ω
Unequal Resistance +&- Lead	1 Ω/Ω of DR	1 Ω/Ω of DR	1 Ω/Ω of DR
X Lead Resistance	0.02 Ω/Ω	0.02 Ω/Ω	0.02 Ω/Ω
Maximum Lead Resistance (Total)	1000 Ω	1000 Ω	1000 Ω
Input protection			
X to ground	1/8A Fuse	1/8A Fuse	1/8A Fuse
Normal Mode (+ to -)	120 VAC	120 VAC	120 VAC
Common Mode(+&- to X)	120 VAC	120 VAC	120 VAC
**Accuracy	+/-0.2%	+/-0.2%	+/-0.2%
**Non-Linearity	+/- 0.02%	+/- 0.02%	+/- 0.02%
**Stability	100 ppm/C	100 ppm/C	100 ppm/C
Frequency Response	4 Hz	4 Hz	4 Hz
Output Voltage Range	0 to 10V	0 to 10V	0 to 10V
Output Resistance	<1 Ω	<1 Ω	<1 Ω
Output Protection	Cont. Short	Cont. Short	Cont. Short
Output Current Limit	15 mA	15 mA	15 mA

Notes: * Typical @ 25C
 ** (of Span)
 *** Hi to Lo: 0 V Lo to GND