

VC2100 VC2100-HS

Two Axis Voltage-to-Current Converter

The VC2100 voltage-to-current converter transforms $\pm 10V$ signals into current signals capable of driving hydraulic servo valves or similar loads. It also provides a convenient way to set the full scale current to match valve requirements, limit maximum current, or set optimum working ranges.

The VC2100-HS is a high-speed version of the VC2100, providing a response time of 15 kHz, compared to 1.4 kHz for the VC2100. In all other respects, these two versions share the same specifications.

Features

- Two channels of voltage-to-current conversion
- Full scale output current switch-selectable from $\pm 10mA$ to $\pm 100mA$ in 10mA steps (each channel set independently)
- Inputs and outputs can be paralleled for output current up to $\pm 200mA$
- Dual-color LEDs indicate input polarity and amplitude
- Outputs protected against inductive voltage spikes and short circuits
- Compact DIN-rail mount package
- Use with $\pm 12V$ to $\pm 15V$ power supplies

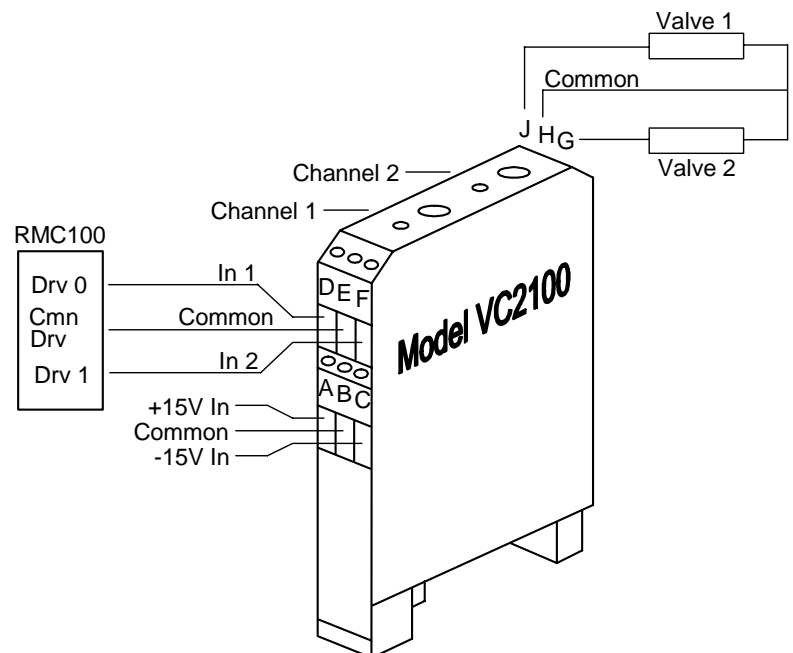
Output Characteristics

This table shows the minimum output drive voltage and maximum load resistance for various output currents and power supply voltages:

Output Current (mA)	$\pm 15V \pm 5\%$ Supplies			$\pm 12V \pm 5\%$ Supplies		
	V_{out} Typ	V_{out} Min	Maximum Load Resistance (Ω)	V_{out} Typ	V_{out} Min	Maximum Load Resistance (Ω)
10	13.7	12.7	1265	10.7	9.8	980
20	13.2	12.2	608	10.2	9.3	465
30	12.7	11.7	388	9.7	8.8	293
40	12.2	11.2	279	9.2	8.3	208
50	11.7	10.7	213	8.7	7.8	156
60	11.2	10.2	169	8.2	7.3	122
70	10.7	9.7	138	7.7	6.8	97
80	10.2	9.2	114	7.2	6.3	79
90	9.7	8.7	96	6.7	5.8	65
100	9.2	8.2	82	6.2	5.3	53

The VC2100 can drive a short circuit to common—the current is internally limited. The output amplifier will shut down under severe overload (such as driving a short to a power supply).

Wiring Diagram



VC2100

Specifications

Converter

Inputs	Two per unit
Indicators	1 dual color LED per channel; Green = positive input, Red = negative, intensity indicates input amplitude
Input Impedance	40k Ω
Input voltage range	$\pm 10V$
Overvoltage protection	$\pm 100V$ (Outputs may reverse polarity if inputs are above power supply voltages)
Outputs	Two per unit
Output current range	$\pm 10mA$ to $\pm 100mA$, switch-selectable (see the <i>Output Characteristics</i> table for more information). Inputs and outputs can be paralleled for output current up to 200mA.
Maximum Load Inductance	1H (100mH for VC2100-HS)
Rise time (square wave input)	400 μs typical, 10% to 90% (-HS 40 μs typical)
3dB frequency (sine wave input)	1.4kHz typical, $\pm 10mA$ to $\pm 100mA$ (-HS 15kHz typical)
Conversion Accuracy	0.6% full scale, typical, all ranges
Offset	0.05% typical, $\pm 100mA$ range 0.5% typical, $\pm 10mA$ range

Power Supply Requirements

Voltage	± 12 VDC to ± 15 VDC
Current	$\pm 50mA$ plus load current ($\pm 250mA$ maximum)
Isolation	There is no isolation between inputs, outputs, and power supplies. If isolation is required, it must be done external to the VC2100.
Protection	Power supply inputs are protected against over-voltage, spikes, and reverse voltage. User should fuse with appropriate fast-blow fuse.

Mechanical

Dimensions	0.94 x 2.94 x 3.94 in (2.4 x 7.5 x 10.0 cm) (WxHxD)
Weight	3.5oz (100g)
Mounting	Mounts directly to DIN rail
Connectors	Cage clamp terminal blocks integrated into package

Environment

Operating temperature	+32 to +140 °F (0 to +60 °C)
Storage temperature	-40 to +185 °F (-40 to +85 °C)

VC2100 Wiring

Terminal	Function
A	+15 volt supply in
B	Power supply common
C	-15 volt supply in
D	Voltage Input 1
E	Common
F	Voltage Input 2
G	Current Output 2
H	Common
J	Current Output 1

Ordering Information

Part Number: VC2100: Standard Version
VC2100-HS: High Speed Version

Company Profile

Delta Computer Systems, Inc. manufactures motion controllers, color sensors/sorters, and other industrial controls providing high-performance automation solutions to a wide range of industries.

