

## I/O Module: LC8

### 8 Load Cell Inputs, $\pm 5$ mV/V, with Sense Input

The LC8 module provides eight load cell inputs with two unpluggable terminal blocks of four inputs each. The LC8 supports sensitivities up to 5 mV/V with full Wheatstone bridge configurations. Quarter and half bridges are supported with a customer-supplied bridge completion circuit.

The 6.75 V excitation is intended to work with 350 ohm load cells. Load cells with lower resistance are supported, as long as the total excitation current per terminal block does not exceed 80 mA.

External customer-supplied excitation voltage may be used as long as the Max Differential Input ( $\pm 34.25$  mV) is not exceeded and the input voltage at In+ or In- relative to -Exc is within the Input Voltage Range (0.6 V to 6.15 V typical).

The LC8 supports 4 wire and 6 wire load cells. Each LC8 load cell input includes a single sense input for wire voltage drop compensation. Therefore, only the negative sense wire on a 6 wire load cell will be connected to the LC8 input. For accurate compensation with a single sense input, the excitation wires should be of the same length and gauge.

One LED per input indicates the state of the respective input.

### LC8 Specifications

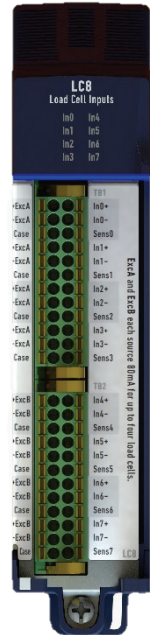
See also General Specifications on page 5.

#### Inputs

Inputs	Eight 24-bit load cell inputs
Overvoltage protection	$\pm 24$ V, momentary
Input range	$\pm 33.75$ mV (5 mV/V with 6.75 V excitation)
Max differential input	$\pm 34.25$ mV (5.075 mV/V with 6.75 V excitation)
Input voltage range	In+ or In- relative to -Exc: 0.6 V to 6.15 V typical
Input impedance	5 M $\Omega$
Input step response	70% in 2 samples times, 100% in 3 samples times
Sampling frequency	8 kHz max
Sampling filter	150 Hz to 2.4 kHz, based on sampling frequency
Offset drift with temperature	$\pm 40$ nV/V/ $^{\circ}$ C typical
Gain drift with temperature	-0.005%/ $^{\circ}$ C (-50 ppm/ $^{\circ}$ C) typical
Non-linearity	$\pm 15$ ppm of Full Scale Range typical
Exciter output	6.75 Vdc $\pm$ 2 mV typical. 80 mA max total of all exciter outputs per terminal block.

#### Common

Max Power Dissipation	1.4 - 2.4 W, depending on use of Exciter Output
Max Power Consumption	1.3 W with no Exciter Output, 3.2 W with Exciter Output



Shown without door

## LC8 Pin-out

### Terminal Block 1 (TB1)

Description		Pin			Description
6.75 V Exciter output	+ExcA	1	2	In0+	Input 0 +
Input 0 Exciter -	-ExcA	3	4	In0-	Input 0 -
Input 0 Shield connection	Case	5	6	S0	Sense -
Input 1	+ExcA	7	8	In1+	Input 1
	-ExcA	9	10	In1-	
	Case	11	12	S1	
Input 2	+ExcA	13	14	In2+	Input 2
	-ExcA	15	16	In2-	
	Case	17	18	S2	
Input 3	+ExcA	19	20	In3+	Input 3
	-ExcA	21	22	In3-	
	Case	23	24	S3	

### Terminal Block 2 (TB2)

Description		Pin			Description
Input 4	+ExcB	1	2	In4+	Input 4
	-ExcB	3	4	In4-	
	Case	5	6	S4	
Input 5	+ExcB	7	8	In5+	Input 5
	-ExcB	9	10	In5-	
	Case	11	12	S5	
Input 6	+ExcB	13	14	In6+	Input 6
	-ExcB	15	16	In6-	
	Case	17	18	S6	
Input 7	+ExcB	19	20	In7+	Input 7
	-ExcB	21	22	In7-	
	Case	23	24	S7	

### Connection Notes:

Load cell Exciter:

Inputs 0-7 are isolated as a single group. There is no isolation between inputs.

The pins must be wired according to wiring diagrams in the Startup Guide and RMCTools. The Sense - input is optional.

Exciter outputs (+Exc) are 6.75 Vdc referenced to -Exc. Maximum current is 80 mA total of all exciter outputs per terminal block.

### Terminal Blocks:

The unpluggable terminal blocks include spring-cage terminals. User-supplied ferrules provide for push-in connections.

### Stranded Wire and Ferrule Size

Conductor cross section	24 – 16 AWG 0.2 – 1.5 mm <sup>2</sup>
Conductor cross section, ferrule no plastic sleeve	0.25 – 1.5 mm <sup>2</sup>
Conductor cross section, ferrule with plastic sleeve	0.25 – 0.75 mm <sup>2</sup>
Stripping Length	10 mm
Ferrule Length	10 – 12 mm