

# Digital Interface

## for Load Cells



## DLC08 — High-Performance Digital Interface for Load Cells

### FEATURES

- Serial interface (RS-485)
- All settings made through the serial interface
- Simple calibration, test and setting via HyperTerminal programming, or via software
- Automatic unit conversion, zero tracking
- Gravity factor compensation
- Tare function
- Suitable for PC-base,  $\mu$ C, PLC application
- Weight result format: six digits, eight annunciators
- Up to 64 nodes
- ESD protection up to 15 kV

### Applications

- OEM machinery
- Load cell digitizers
- Inventory and level control

### Options

- USB interface
- Tilt sensor

## High-Performance Digital Interface for Load Cells

The Model DLC08 is a high-performance, digital load cell interface for precision measurement of strain gage transducers. With DLC08 technology, any analog load cell can be converted to a fully functioning digital load cell. The interface circuit board can either be embedded in the load cell (space permitting), or installed in a 9 pin "D" type connector at the load cell cable end.

Simple RS-485 wiring connects the DLC08 to any PC, PLC, or DCS device. All calibration and operating procedures are fully documented on the accompanying installation CD-ROM. The DLC08's software is classified as "open architecture", and provides instant access to all configuration and calibration parameters. When paired with a DLC-08, a summing junction box can digitally interface with multiple load cell scales via the DLC08's RS-485 serial bus.

Parameter	Symbol	Min	Typ	Max	Unit
<b>Bridge input</b>					
Bridge excitation	$V_{exc}$	4.8	5.0	5.2	V
Bridge resistance	$R_{LC}$	315	350		$\Omega$
<b>Full scale input sensitive</b>					
PGA = 1				3.50	mV/V
PGA = 2				1.85	mV/V
PGA = 4				0.90	mV/V
PGA = 8				0.45	mV/V
Common mode voltage		1.50	2.50	3.50	V
Input impedance		10 <sup>9</sup>			$\Omega$
<b>Digital Bus – RS-485 protocol</b>					
Baud rate			19,200		Bit/sec
Communication mode		Point-to-point or RS-485 multi-drop communication			
Built-in termination resistor			8,870		$\Omega$
Cable length (with suitable Rt)				1,000	m
<b>Performance</b>					
Internal resolution			24		Bits
Noise (Ref to input, filter 4/4/4)				0.30	$\pm\mu\text{V RMS}$
Digital filters		3 filters, software selectable			
Nonlinearity (in Ts)			0.008	0.011	% $F_s$
Sample rate	$C_s$		15		Hz
Zero stability (in Ts)			10	15	$\pm\text{ppm}F_s/^\circ\text{C}$
Span stability (in Ts)			1.6	2.3	$\pm\text{ppm}F_s/^\circ\text{C}$
<b>Environmental conditions</b>					
Specification temperature (full performance)	$T_s$	-10	+20	+40	$^\circ\text{C}$
Operating temperature		-40		+85	$^\circ\text{C}$
Storage temperature		-40		+85	$^\circ\text{C}$
<b>Power supply – DC only</b>					
Supply voltage	$V_p$	7.5	12	15	V
Supply current			32	45	mA
Maximum rating power supply ( $T \leq 500$ ms)				30	V
Reverse power protection				-60	V

All specifications subject to change without notice.

Content extracted from DLC08 datasheet rev. 09/2018

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