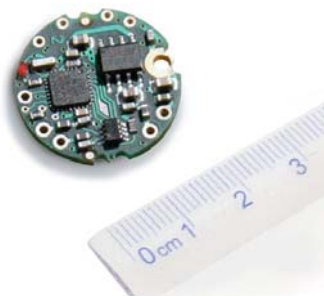


## Digital Strain Gauge or Load Cell Embedded Digitiser Module

### Features

- New Generation Extremely High Performance & Low Cost
  - Easy mounting via 2mm screw
  - Connection via solder holes to either side of pcb
  - Low profile to fit in very small apertures
  - Baud rates to 230k
  - High speed to 500 Readings/Sec
  - Low cost
  - ±15KV ESD protected
  - Real mV/V calibration
  - Extreme Noise Immunity 5 x heavy industrial level
  - Diagnostics LED
  - Remote Shunt Calibration
  - Very high stability (*Capable of 6000 Divisions OIML*)
  - Peak and Trough Recording
- 
- Compatible with previous Version 2 DCell
  - Programmable dynamic filter
  - Wide operating voltage (5.4V - 18V)
  - DC Excitation for longer cable lengths

### Introduction

The 2<sup>nd</sup> Generation DCell is a high performance digital signal conditioner with a host of additional features for the precision measurement of strain gauge transducers.

The Micro Miniature PCB is designed to fit inside the majority of sensors

### Standard Characteristics

- System Calibration
- Transducer Calibration
- Self Diagnostics
- Sensor Operation Limit Alarms
- Reverse Polarity Protected
- Fieldbus Compatibility
- High Performance
- Continuous Auto Zero Operation
- RS485 Communication
- 3 Year Manufacturers Warranty
- Full CE Approval
- Capable of ATEX Approval

### Options

- Temperature Compensation via external sensor
- OEM Application software through Bootloader, allowing special functions to be programmed via RS485
- RS232-RS485 Convertor
- Alternative Sensitivities (1-20mV/V)

### Specifications

Product Description	Min	DLCH High Stability		Min	DLCS Industrial Stability		Units
		Typ	Max		Typ	Max	
Bridge Excitation	4.5	5	5.25	4.5	5	5.25	VDC
Bridge Impedance	320	350	5,000	320	350	5,000	Ohms
Sensor Impedance up to 18v Supply	320	350	5,000	320	350	5,000	Ohms Δ
Sensor Impedance up to 12v Supply	120	350	5,000	120	350	5,000	Ohms Δ
Bridge Sensitivity	-3		+3	-3		+3	mV/V
Offset Temperature Stability		1	4		5	10	ppm/C
Gain Temperature Stability		3	5		30	50	ppm/C
Offset Stability with Time		0.002	0.008		0.0035	0.016	%FR ·
Gain Stability with Time			30			300	ppm of FR /1 <sup>st</sup> Year
Non Linearity		0.0005	0.0025		0.0005	0.0025	% FR
Internal Resolution		16 Million			16 Million		Counts/Divisions
Resolution @ 1Hz (Noise Stable) ◆		400,000			100,000		Counts/Divisions
Resolution @ 10Hz (Noise Stable) ◆		120,000			40,000		Counts/Divisions
Resolution @ 100Hz (Noise Stable) ◆		50,000			10,000		Counts/Divisions
Resolution @ 500Hz (Noise Stable) ◆		18,000			5,000		Counts/Divisions
Optional							
Temperature Measurement Resolution		0.1					°C
Temperature Measurement Accuracy		1					°C

Notes: · From original offset at any time. ◆ Stability over 100 second period. Δ Subject to supply voltage. See Electrical Specification overleaf.

### Electrical

Power Supply Voltage	5.4	12	18	5.4	12	18	V dc
Power Supply Noise/Ripple			100			100	mV ac pk-pk
Power Supply Current (350R Bridge)		45	60		45	60	mA
Power @ 10V Supply (350R Bridge)		350			350		mW
Sensor Impedance up to 18v Supply	320	350	5,000	320	350	5,000	ohms
Sensor Impedance up to 12v Supply	120	350	5,000	120	350	5,000	ohms
Excitation System		4 wire			4 wire		

### Environmental

Operating temperature range	-40		85	-40		85	°C
Operating temperature range for OIML 6000d	-10		55				°C
Storage temperature	-40		85	-40		85	°C
Humidity	0		95	0		95	%RH Non Condensing

### Communications

RS485 Data Rate	2,400	230k		2,400	230k		Baud
CAN Bit Rate	10K	1M		10K	1M		Bits/Sec

Note: Update speeds are selectable to 1, 2, 5, 10, 20, 50, 60, 100, 200, 300, 500 Samples/Sec

### Protocols

Available Now:

ASCII, MANTRABUS II, Modbus RTU, MantraCAN, CANopen, Profibus - available shortly please ask for details

### Support Modules

Instrument Explorer Software	RS232 - RS485 Convertor
VisualLink & VisualLink lite free PC software	DCell Evaluation Kits

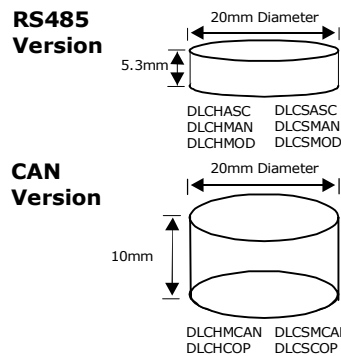
### Product Order Codes

Description	Product Code	Description	Product Code
<b>High Stability DLCH</b>		<b>Industrial Stability DLCS</b>	
RS485 ASCII Protocol	DLCHASC	RS485 ASCII Protocol	DLCSASC
RS485 MANTRABUS Protocol	DLCHMAN	RS485 MANTRABUS II Protocol	DLCSMAN
RS485 MODBUS Protocol	DLCHMOD	RS485 MODBUS Protocol	DLCSMOD
MantraCAN Protocol	DLCHMCAN	MantraCAN Protocol	DLCSMAN
CANopen Protocol	DLCHCOP	CANopen Protocol	DLCSCOP

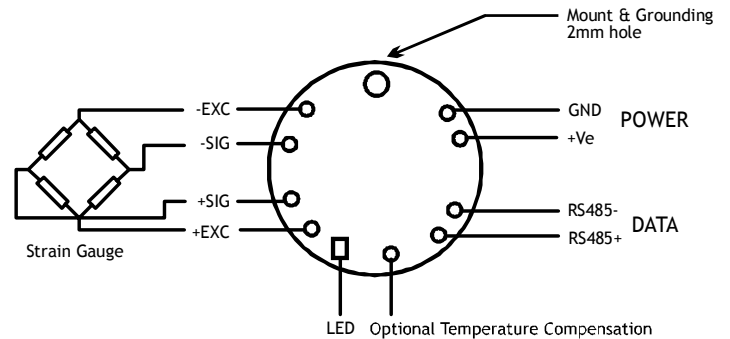
### CE & Environmental

Storage temperature	-20 to +70°C	EMC Emissions	BS EN 55011:1998
Operating temperature	-10 to 50°C	EMC Immunity	BS EN 61000-42:1995
Relative humidity	95% maximum non condensing		BS EN 61000-4-3:2002
Safety/Low Voltage Directive	73/23/EEC amended by 93/68/EEC		BS EN 61000-4-4:2004
	BS EN 61010-1:2001, IEC 1010-1-1990		BS EN 61000-4-11:2004
EMC Directive	89/336/EEC		
	Basic Standard BS EN 61326:1998		

### Mechanical Dimensions



### Connections



**CE** In the interest of continued product development, Procter & Chester (Measurements) Ltd reserves the right to alter product specifications without prior notice.