



APPLIED MEASUREMENTS LTD.
Transducer Specialists...

+44 (0) 118 981 7339

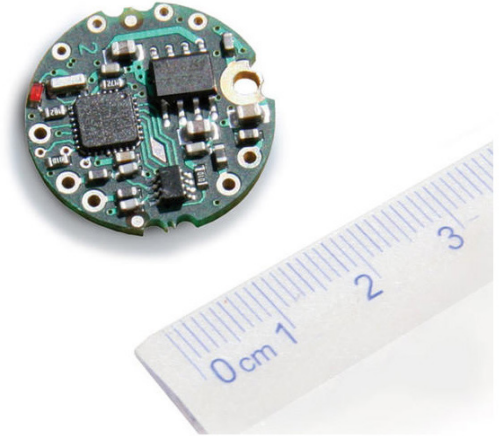
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DCell Miniature Load Cell Digitiser

Key Features:

- Extremely Compact Ø20mm
- Available Protocols: ASCII, MantraBUS II, MODBUS, MantraCAN
- High Speed: 500 Readings/Second max.
- Available with In-Line Enclosure for Mounting on Load Cell Cable
- Error Reporting Including Strain Gauge Fault Conditions
- Free Software Enabling 24 DCells to be Viewed and Logged Simultaneously
- 3 Years Guarantee



The compact DCell miniature load cell digitiser is designed to convert standard strain gauge transducer input into an RS485 digital output. Its very compact size of just 20mm diameter and 5mm high enables it to fit into the majority of strain gauge load cells and is easily mounted using one M2 screw.

The DCell provides high speed conversion of up to 500 readings per second and high precision digitising capabilities of up to 6000 divisions OIML and Baud rates up to 230,400, along with linearization and temperature compensation.

Available output formats include the RS485, ASCII, Modbus, CAN and MantraCAN (J1939). All are 4 wire bus and power formats offering connection of up to 32 sensors on just 4 wires. It is capable of operating from a DC voltage ranging from 5.4V to 18V. The input is reverse polarity protected and requires a maximum operating current of 60mA.

PC-based calibration can be direct from the sensor or mV/V based and includes linearization and temperature compensation, please contact our [technical sales team](#).

Options:

- In-Line Stainless Steel Enclosure Optional
- Cable Lengths of up to 1000m
- Miniature digital temperature sensor module

Industries:

- Civil Engineering
- Agriculture
- Marine
- Industrial Processing
- Theatre & Events
- Waste Management
- Automotive
- Alternative Energy
- Construction
- Lifting & Handling

Applications:

- Test & Measurement
- Torque Measurement
- Load & Force Measurement
- Pressure Measurement
- Displacement & Position Measurement
- Large Structure Relocation
- Farm Weighing System
- Mast Force Monitoring Racing Yachts
- Prop Supports in Dry Dock
- Consistency in Repeatable Weld Joints
- Monitoring Peak Loads of Advertising Banners
- Steering Torque Sensors for Assessment Situations



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Specification:

Parameter	Min	Typical	Max	Units
DCell High Stability				
Bridge Excitation	4.5	5	5.25	VDC
Sensor Impedance up to 18V Supply	320	350	5,000	Ohms**
Sensor Impedance up to 12V Supply	120	350	5,000	Ohms**
Bridge Sensitivity	-3		+3	mV/V
Offset Temperature Stability		1	4	ppm/C
Gain Temperature Stability		3	5	ppm/C
Offset Stability with Time		0.002	0.008	%FR
Gain Stability with Time			30	ppm of FR/1st Year
Non Linearity		0.0005	0.0025	%FR
Internal Resolution		16 Million		Counts/Divisions
Resolution @ 1Hz (Noise Stable) *		200,000		Counts/Divisions
Resolution @ 10Hz (Noise Stable) *		120,000		Counts/Divisions
Resolution @ 100Hz (Noise Stable) *		50,000		Counts/Divisions
Resolution @ 500Hz (Noise Stable) *		18,000		Counts/Divisions
Optional Temperature Measurement Resolution		0.1		°C
Optional Temperature Measurement Accuracy		1		°C
Notes: From original offset at any time. *Stability over 100 second period. **Subject to supply voltage. See Electrical Specification				
Electrical				
Power Supply Voltage	5.4	12	18	V dc
Power Supply Noise/Ripple			100	mV ac pk-pk
Power Supply Current (350R Bridge)		45	60	mA
Power @ 10V Supply (350R Bridge)		350		mW
Sensor Impedance up to 18v Supply	320	350	5,000	ohms
Sensor Impedance up to 12v Supply	120	350	5,000	ohms
Excitation System		4 wire		
Environmental				
Operating Temperature Range	-40		85	°C
Operating Temperature Range for OIML 6000d	-10		55	°C
Storage Temperature	-40		85	°C
Humidity	0		95	%RH on Condensing
Continued on next page				
Communications				
RS485 Data Rate	2,400		230k	Baud
CAN Bit Rate	10k		1M	Bits/Sec
Note: Update speeds are selectable to 1, 2, 5, 10, 20, 50, 60, 100, 200, 300, 500 Samples/Sec				
Protocols	ASCII, MANTRABUS II, Modbus RTU, MantraCAN, Profibus - Contact Mantracourt for details. Please Note: MantraCAN products will only work with Mantracourt software up to and including Windows Vista.			



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DCell Industrial Stability				
Excitation	4.5	5	5.25	VDC
Sensor Impedance up to 18v Supply	320	350	5,000	Ohms**
Sensor Impedance up to 12v Supply	120	350	5,000	Ohms**
Bridge Sensitivity	-3		+3	mV/V
Offset Temperature Stability		5	10	ppm/C
Gain Temperature Stability		30	50	ppm/C
Offset Stability with Time		0.0035	0.016	%FR „]
Gain Stability with Time			300	ppm of FR /1st Year
Non Linearity		0.0005	0.0025	% FR
Internal Resolution		16 Million		Counts/Divisions
Resolution @ 1Hz (Noise Stable) *		66,000		Counts/Divisions
Resolution @ 10Hz (Noise Stable) *		40,000		Counts/Divisions
Resolution @ 100Hz (Noise Stable) *		10,000		Counts/Divisions
Resolution @ 500Hz (Noise Stable) *		5,000		Counts/Divisions
Optional Temperature Measurement Resolution		0.1		°C
Optional Temperature Measurement Accuracy		1		°C
Notes: From original offset at any time. *Stability over 100 second period. ** Subject to supply voltage. See Electrical Specification				
Electrical				
Power Supply Voltage	5.6	12	18	V dc
Power Supply Noise/Ripple			100	mV ac pk-pk
Power Supply Current (350R Bridge)		45	60	mA
Power @ 10V Supply (350R Bridge)		350		mW
Sensor Impedance up to 18v Supply	320	350	5,000	ohms
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Excitation System		4 wire		
Environmental				
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Support Modules	Instrument Explorer Software free PC software, RS232 - RS485 Convertor, DCell Evaluation Kits			
Environmental				
CE Environmental Approvals	European EMC Directive 2004/108/EC, Low Voltage Directive 2006/95/EC			



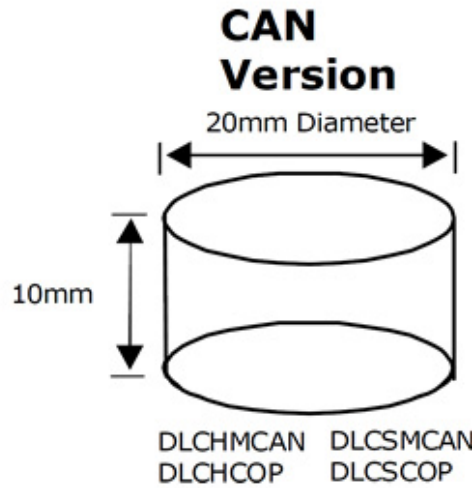
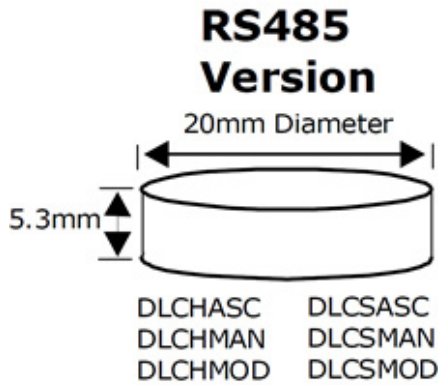
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Dimensions (mm):



Ordering Codes:

DLCHASC	DLC	H	ASC
example code			
Model			
DLC	DLC		
Stability			
High		H	
Industrial		S	
Protocol			
ASCII			ASC
MANTRABUS			MAN
MODBUS			MOD
MantraCAN			MCAN

Code	Details
High Stability	
DLCHASC	In Cell ASCII Protocol
DLCHMAN	In Cell MANTRABUS Protocol
DLCHMOD	In Cell MODBUS Protocol
DLCHMCAN	In Cell MantraCAN Protocol
Industrial Stability	
DLCSASC	In Cell ASCII Protocol
DLCSMAN	In Cell MANTRABUS Protocol
DLCSMOD	In Cell MODBUS Protocol
DLCSMCAN	In Cell MantraCAN Protocol



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Ordering Codes Continued:

Options	Details
ILE	In-Line Housing for Load Cell Amplifiers & Digital Converters (*Ex Works)
Display	
DS485DIS	Display Module with RS485 Input
Accessories	
EVAL KIT 485	Evaluation Kit RS485 (*Ex Works)
EVAL KIT CAN	Evaluation Kit for CAN (*Ex Works)
DTEMP	Digital Temperature Sensor Module for Wiring to DCell/DSC

Associated Products:



[TR150 Handheld Indicator](#)



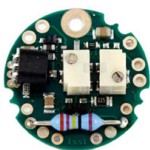
[T24 Wireless Telemetry Range](#)



[Intuitive4-L Panel-Mount Indicator](#)



[DSC-USB USB Signal Digitiser](#)



[ICA Miniature Strain Gauge Amplifier](#)



[SGA Signal Conditioner/Amplifier](#)