



APPLIED MEASUREMENTS LTD.
Transducer Specialists...

+44 (0) 118 981 7339

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<https://appmeas.co.uk>

DSC Load Cell Converter

Key Features:

- Extremely Compact
- RS232 & RS485 Output Versions
- High Performance, Resolution of 1 Part in 200,000 (18bit)
- Available Protocols: ASCII, MantraBUS II, Modbus RTU or MantraCAN (J1939)
- OEM PCB Format for Easy Fitting to Products
- Auto Calibration or Direct Entry of mV/V with Linearisation
- Programmable Dynamic Filter
- Temperature Compensation
- Error Reporting Including Strain Gauge Fault Conditions and Overloads
- Peak and Trough (Valley) Recording
- Remote Shunt Calibration by Software Command or Digital Input
- Options for Multiple or Single Enclosures
- High Speed: 500 Readings/Second max.
- Available with In-Line Enclosure for Mounting on Load Cell Cable
- Software Enabling 24 DSC or DCells to be Viewed and Logged Simultaneously



The compact [DSC load cell converter](#) is designed to convert strain gauge transducer input into an RS232 or RS485 digital signal. It is designed for use with a variety of transducers including load cells, pressure transducers, torque sensors and displacement transducers.

The DSC load cell converter delivers high accuracy, high speed signal conversion with digital linearisation and temperature compensation of the sensor to improve the sensor far beyond its normal performance level. Available protocols are; ASCII, MODBUS and MantraCAN (J1939).

Designed to be mounted in-line with the transducer, the DSC load cell converter can also be pre-mounted in an IP65 rated enclosure. Two enclosure options are available:

- DSJ1 which holds a single load cell converter
- DSJ4 which holds four load cell converters - Requires RS485 output versions of the load cell converter as this is the only type suitable for 'daisy chaining' on a single bus.

The PC-based calibration of the strain gauge converter can be performed directly from the sensor output signal, or as a mV/V sensitivity entry for ultimate flexibility.

Other strain gauge converter features include very high resolution of up to 1:200,000, high speed output at up to 500 updates/second and programmable dynamic filtering.

DSC devices offer continuous monitoring for faults inc. overload, over/under temperature, broken sensors or unexpected power fail. All fault warnings are retained on power fail. [See our other digitisers.](#)

Options:

- Multiple or Single Enclosure
- RS232 or RS485 Outputs



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Industries:

- Civil Engineering
- Agriculture
- Marine
- Industrial Processing
- Waste Management
- Alternative Energy
- Construction
- Lifting & Handling
- Automotive
- Silo & Weighing Industry
- Torque Measurement

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

Specification:

Parameter	Min	Typical	Max	Units
DSCH 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
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	5.6	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
Sensor Impedance up to 12v Supply	120	350	5,000	ohms
Excitation System 4 wire		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



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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 or MantraCAN (J1939). Please Note: MantraCAN products will only work with Microsoft operating systems up to and including Windows 10.			
DSCS Industrial Stability				
Bridge Excitation	4.5	5	5.25	VDC
Bridge Impedance	320	350	5,000	Ohms
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
Sensor Impedance up to 12v Supply	120	350	5,000	ohms
Excitation System	4 wire			
Environmental				
Operating temperature range	-40		85	°C
Storage temperature	-40		85	°C
Humidity	0		95	%RH Non Condensing
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 or MantraCAN (J1939). Please Note: MantraCAN products will only work with Microsoft operating systems up to and including Windows 10.			
Support Modules	Instrument Explorer Software free PC software, RS232 - RS485 Converter, DCell Evaluation Kits			
CE Environmental Approvals	European EMC Directive 2004/108/EC, Low Voltage Directive 2006/95/EC			



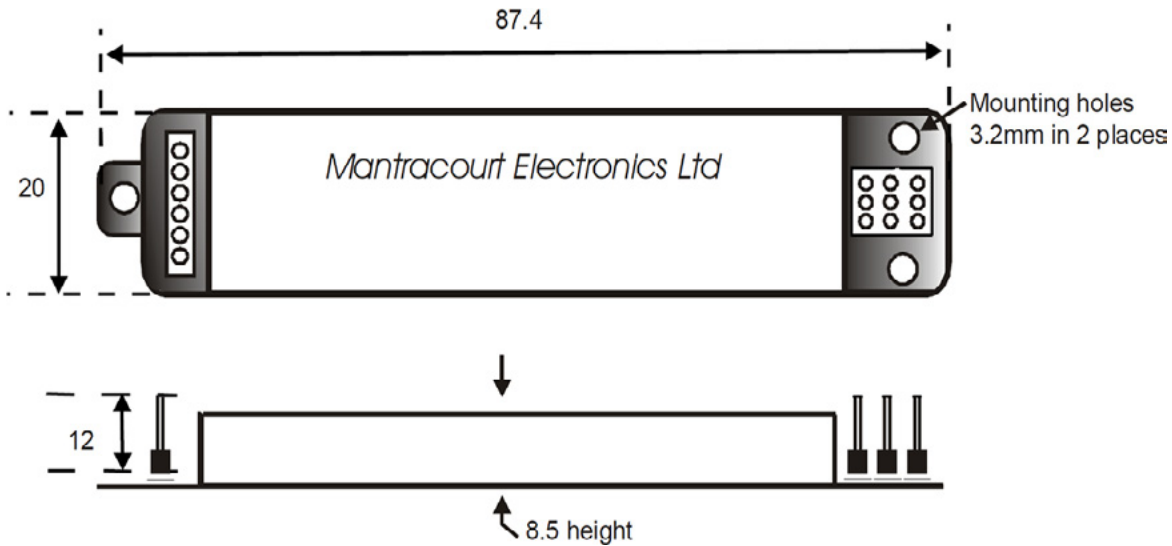
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Dimensions (mm):



Ordering Codes:

DSCH2ASC	DSC	H	2	ASC
example code				
Model				
DSC	DSC			
Stability				
High		H		
Industrial		S		
Output				
RS232			2	
RS485			4	
MantraCAN (J1939)			Leave Blank	
Protocol				
ASCII				ASC
MANTRABUS				MAN
MODBUS				MOD
MantraCAN (J1939)				MCAN

Code	Details
High Stability	
DSCH2ASC	RS232 output, ASCII Protocol
DSCH2MAN	RS232 output, MANTRABUS Protocol
DSCH2MOD	RS232 output, MODBUS Protocol
DSCH4ASC	RS485 output, ASCII Protocol
DSCH4MAN	RS485 output, MANTRABUS Protocol
DSCH4MOD	RS485 output, MODBUS Protocol
DSCHMCAN	MantraCAN (J1939) Protocol
Industrial Stability	
DSCS2ASC	RS232 output, ASCII Protocol
DSCS2MAN	RS232 output, MANTRABUS Protocol
DSCS2MOD	RS232 output, MODBUS Protocol
DSCS4ASC	RS485 output, ASCII Protocol
DSCS4MAN	RS485 output, MANTRABUS Protocol
DSCS4MOD	RS485 output, MODBUS Protocol
DSCSMCAN	MantraCAN (J1939) Protocol



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Associated Products:



[TR150 Handheld Indicator](#)



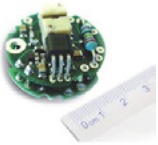
[T24 Wireless Telemetry Range](#)



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



[DSC-USB USB Signal Digitiser](#)



[ICA Miniature Strain Gauge Amplifier](#)



[SGA Signal Conditioner/Amplifier](#)