



## TYPE: DSC



# DSC Digital Strain Gauge to Data Converter

## Description

The DSC is a high performance digital signal conditioner with a host of additional features for the precision measurement of strain gauge based transducers. The DSC is available with an RS485 or RS232 output format, making it suitable for 'one-to-one' or multi drop systems.

Including the DSC into load cell based applications enables the building of very high accuracy load cells, using the built in linearisation and temperature compensation facilities. The DSJ1 single channel junction box and the DSJ4 four channel junction box are available to assist with simple on-site installation and commissioning.

LCM Systems can also supply PC based software packages, specially written to interface with DSC based load cells and pressure transducers. Please contact our technical department to discuss your requirements.

## Specification

DSCH High Stability	Min	Typ	Max
Bridge excitation (Ohms)	4.25	5	5.25
Bridge impedance (Ohms)	320	350	5000
Sensor impedance: 18V supply (Ohms) *	320	350	5000
Sensor impedance: 12V supply (Ohms) *	120	350	5000
Bridge sensitivity (mV/V)	-3		+3
Offset temperature stability (ppm/°C)		1	4
Gain temperature stability (ppm/°C)		3	5
Offset stability with time (%FR)		0.002	0.008
Gain stability with time (ppmFR/1st year)			30
Non linearity (%FR)		0.0005	0.0025
Internal Resolution (counts/divisions)		16 million	
Resolution @ 1Hz (noise stable)		200,000	
Resolution @ 10Hz (noise stable)		120,000	
Resolution @ 100Hz (noise stable)		50,000	
Resolution @ 500Hz (noise stable)		18,000	

DSCS Industrial Stability	Min	Typ	Max
Bridge excitation (Ohms)	4.25	5	5.25
Bridge impedance (Ohms)	320	350	5000
Sensor impedance: 18V supply (Ohms) *	320	350	5000
Sensor impedance: 12V supply (Ohms) *	120	350	5000
Bridge sensitivity (mV/V)	-3		+3
Offset temperature stability (ppm/°C)		5	10
Gain temperature stability (ppm/°C)		30	50
Offset stability with time (%FR)		0.0035	0.016
Gain stability with time (ppmFR/1st year)			300
Non linearity (%FR)		0.0005	0.0025
Internal Resolution (counts/divisions)		16 million	
Resolution @ 1Hz (noise stable)		66,000	
Resolution @ 10Hz (noise stable)		40,000	
Resolution @ 100Hz (noise stable)		10,000	
Resolution @ 500Hz (noise stable)		5,000	

\* Subject to supply voltage (see electrical specifications)

## Available Options

- Temperature Measurement Resolution (0.1°C) & Temperature Measurement Accuracy (1°C)

## Features

- RS485 and RS232 versions available
- Baud rates to 230K
- High speed to 500 readings/second
- ±15KV ESD protected
- Real mV/V calibration
- Noise immunity 5 x heavy industrial level
- Diagnostics LED
- Remote shunt calibration
- Very high stability
- Peak and trough recording
- Programmable dynamic filtering

## Typical Applications

- High accuracy aircraft weighing
- Crane weighing using LDD-LITE large digit display
- Centre of gravity PC based systems
- Condition and safety monitoring systems

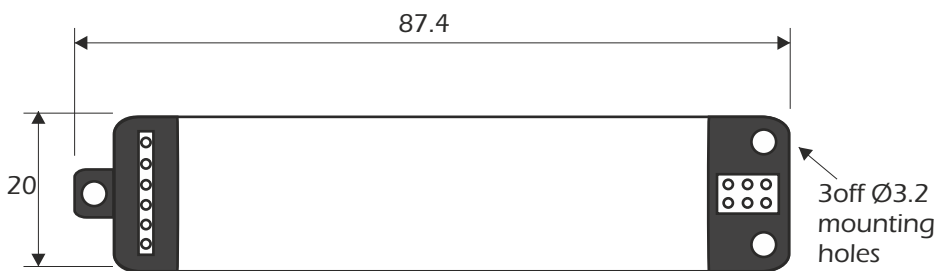
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## Specification (continued)

Power supply voltage (Vdc)	5.6 to 18 (12 typical)
Power supply noise/ripple (mVac pk-pk)	100
Supply current - 350R Bridge (mA)	45 to 60
Power@ 10V supply - 350R bridge (mW)	350
Excitation system	4 wire
RS485/RS232 data rate (Baud)	2400 min, 230,000 max
Protocols	ASCII, MantraBUS II, Modbus RTU
Storage temperature	-40 to +85°C
Operating temperature	-40 to +85°C
Relative humidity	95% maximum non-condensing
European EMC Directive	2004/108/EC
Low Voltage Directive	2006/95/EC



## Dimensions



All dimensions are in mm

## Product Order Codes

<b>High Stability RS232</b>	ASCII Protocol	DSCH2ASC
	MantraBUS Protocol	DSCH2MAN
	MODBUS Protocol	DSCH2MOD
<b>High Stability RS485</b>	ASCII Protocol	DSCH4ASC
	MantraBUS Protocol	DSCH4MAN
	MODBUS Protocol	DSCH4MOD
<b>Industrial Stability RS232</b>	ASCII Protocol	DSCS2ASC
	MantraBUS Protocol	DSCS2MAN
	MODBUS Protocol	DSCS2MOD
<b>Industrial Stability RS485</b>	ASCII Protocol	DSCS4ASC
	MantraBUS Protocol	DSCS4MAN
	MODBUS Protocol	DSCS4MOD

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Due to continual product development, LCM Systems Ltd reserves the right to alter product specifications without prior notice.

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APPROVED

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