

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 a RS485 or RS232 output format, making it suitable for "one-to-one" or multi-drop systems.

Including the DSC into load cell based applications enable the building of very high accuracy load cells, using the built in linearisation and temperature compensation facility.

The DSJ1, single channel junction box and DSJ4, 4-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 DCELL based load cells and pressure transducers. Please contact our technical department to discuss your requirements.

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

DSC Digital Strain Gauge to Data Converter



Features

- RS485 and RS232 versions available
- Baud rates to 230k
- High speed to 500 Readings/Sec
- $\pm 15\text{KV}$ ESD protected
- Real mV/V calibration
- Noise Immunity 5x heavy industrial level
- Diagnostics LED
- Remote shunt calibration
- Very high stability
- Peak and trough recording
- Programmable dynamic filter
- Operating voltage (5.4 – 18Vdc)

Digital Strain Gauge to Data Converter

Specification

Product Description	DSCH High Stability			DSCS Industrial Stability			Units
	Min	Typ	Max	Min	Typ	Max	
Bridge Excitation	4.5	5	5.25	4.5	5	5.25	VDC
Bridge Impedance	320	350	5000	320	350	5000	Ohms
Sensor Impedance (18v supply)	320	350	5000	320	350	5000	Ohms Δ
Sensor Impedance (12v supply)	120	350	5000	120	350	5000	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 st 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

Temp Measurement Resolution	0.1		0.1				°C
Temp Measurement Accuracy	1		1				°C

Notes: From original offset at any time ⊙ Stability over 100 seconds Δ Subject to supply voltage (see electrical specifications)

Electrical	Min	Typ	Max	Min	Typ	Max	Units
Power Supply Voltage	5.4	12	18	5.4	12	18	Vdc
Power Supply Noise/Ripple			100			100	mVac pk-pk
Supply Current (350R Bridge)		45	60		45	60	mA
Power@10V Supply (350R Bridge)		350			350		mW
Excitation System		4 wire			4 wire		

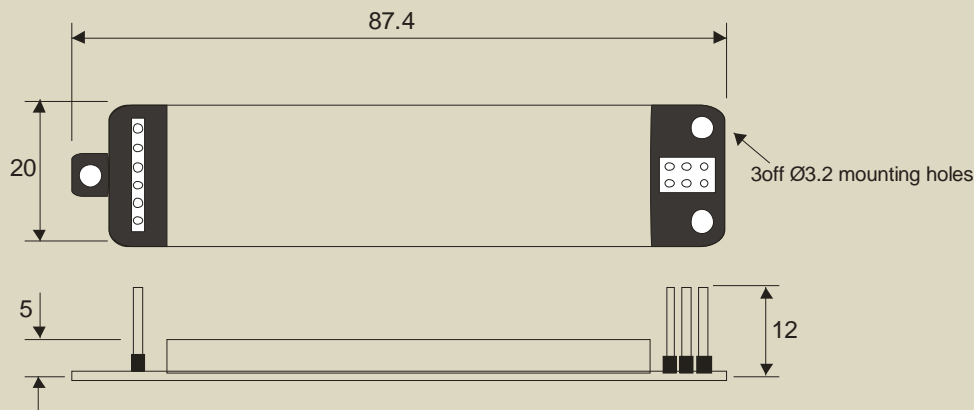
Communications	Min	Typ	Max	Min	Typ	Max	Units
RS485/RS232 Data Rate	2400		230k	2400		230k	Baud
Protocols	ASCII, MANTRABUS II, Modbus RTU						

CE & Environmental

Storage temperature	-40 to +85°C
Operating temperature	-40 to +85°C
Relative humidity	95% maximum non-condensing
Safety/Low Voltage Directive	73/23/EEC amended by 93/68/EEC BS EN 61010-1:2001, IEC 1010-1-1990
EMC Directive	89/336/EEC Basic Standard BS EN 61326:1998
EMC Emissions	BS EN 55011:1998
EMC Immunity	BS EN 61000-4-2:1995 BS EN 61000-4-3:2002 BS EN 61000-4-4:2004 BS EN 61000-4-11:2004

Mechanical Dimensions

All dimensions in millimeters



Product Order Codes

High Stability RS232 Product Code

ASCII Protocol	DSCH2ASC
MANTRABUS Protocol	DSCH2MAN
MODBUS Protocol	DSCH2MOD

High Stability RS485

ASCII Protocol	DSCH4ASC
MANTRABUS Protocol	DSCH4MAN
MODBUS Protocol	DSCH4MOD
	DSCHMCAN

Industrial Stability RS232

ASCII Protocol	DSCS2ASC
MANTRABUS Protocol	DSCS2MAN
MODBUS Protocol	DSCS2MOD

Industrial Stability RS485

ASCII Protocol	DSCS4ASC
MANTRABUS Protocol	DSCS4MAN
MODBUS Protocol	DSCS4MOD

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

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