TYPE: DSC

DSC Digital Strain Gauge to Data Converter

Features

- RS485 and RS232 versions available
- Baud rates to 230k
- High speed to 500 Readings/Sec
- ±15KV 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 filtering
- Operating voltage (5.4 – 18Vdc

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

Description

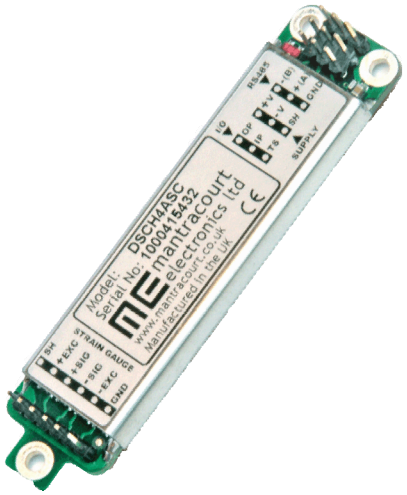
The DSC is a high performance digital signal conditioner with a host of additional features for the precision measurement of strain gauge based transducers.

The DSC is available with an RS485 or RS232 output format, making it suitable for “one-to-one” or mutli-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 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 DCELL based load cells and pressure transducers. Please contact our technical department to discuss your requirements.



Specification

Product — DSCH High Stability — DSCS Industrial Stability

Description	Min	Typ	Max	Min	Typ	Max	Units
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	OhmsΔ
Sensor Impedance (12v supply)	120	350	5000	120	350	5000	OhmsΔ
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 FR/1st yr
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)		8,000				5,000	Counts/Divisions

Optional

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

Notes: Stability over 100 seconds from original offset at any time
ΔSubject to supply voltage (see electrical specifications

DSC Digital Strain Gauge to Data Converter TYPE: DSC

Product Electrical

Description	DSCH High Stability Min	Typ	Max	DSCS Industrial Stability 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

Description	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 +85ºC
Operating temperature	-40 to +85°C
Relative humidity	95% maximum non-condensing
European EMC Directive	2004/108/EC
Low Voltage Directive	2006/95/EC

Product Order Codes

High Stability RS232	Product Code
ASCII Protocol	DSCH2ASC
MANTRABUS Protocol	DSCH2MAN
MODBUS Protocol	DSCH2MOD

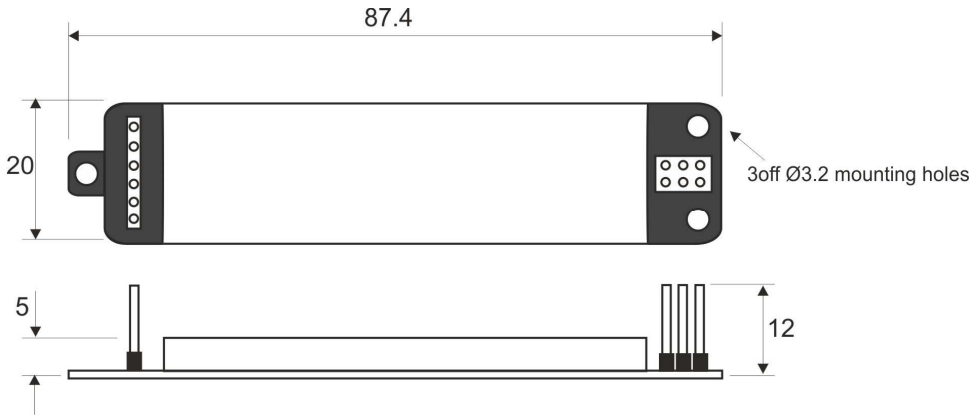
High Stability RS485	Product Code
ASCII Protocol	DSCH4ASC
MANTRABUS Protocol	DSCH4MAN
MODBUS Protocol	DSCH4MOD
	DSCHMCAN

Industrial Stability RS232	
ASCII Protocol	DSCS2ASC
MANTRABUS Protocol	DSCS2MAN
MODBUS Protocol	DSCS2MOD

Industrial Stability RS485	
ASCII Protocol	DSCS4ASC
MANTRABUS Protocol	DSCS4MAN
MODBUS Protocol	DSCS4MOD

Mechanical Dimensions

All dimensions in millImeters



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

Issue date: 17/11/2011