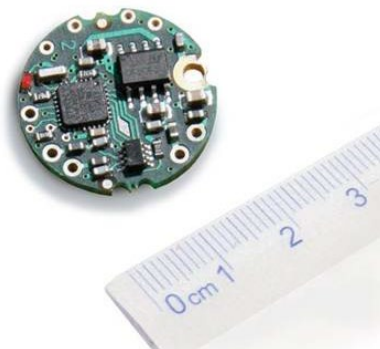


Features

- Strain gauge to RS485 or CAN digital load cell converter.
- Low profile, small 20mm diameter.
- Auto calibration or direct entry of mV/V with linearization.
- Ultra-high performance, resolution of 1 part in 200,000 (18bit).
- Error reporting including strain gauge fault conditions.
- Programmable dynamic filter.
- Free software.
- Remote shunt calibration.
- Peak and trough recording.
- Suitable for long cable lengths, up to 1000m.
- Optional temperature sensor module.
- Optional ILE inline housing.
- Optional complete Evaluation Kit to trial.



Description

The DCell is a high-performance digital load cell converter or strain gauge digitiser module supplied in miniature format. It has been designed to be integrated directly into strain gauge sensors such as load cells, pressure, or torque transducers.

DCell amplifiers offer high speed and high precision digitising capabilities, along with linearization and temperature compensation. A DCell converts mV/V signal to a digital output. Output format options include RS485, ASCII, Modbus, MantraCAN (J1939) and CANopen. All are 4-wire bus and power formats to offer connection of up to 32 sensors on just 4-wires.

If you would like to trial working with a DCell, you may be interested in the Evaluation Kit; more information on this kit can be found on **Page 4** of this data sheet. This amplifier can also be mounted inline using the ILE inline stainless-steel housing available. More information can be found on the ILE on **Page 3** of this data sheet.

Typical Specification

ELECTRICAL & ENVIRONMENTAL	DLCH (HIGH STABILITY)			DLCS (INDUSTRIAL STABILITY)			UNITS
	MIN.	TYPICAL	MAX.	MIN.	TYPICAL	MAX.	
Supply Voltage Range	5.4	12	18	5.6	12	18	Volts DC
Power Supply Noise/Ripple	-	-	100	-	-	100	mV ac pk-pk
Power Supply CURRENT (350Ω BRIDGE)	-	45	60	-	45	60	mA
Power at 10V Supply (350Ω BRIDGE)	-	350	-	-	350	-	mW
Excitation System	-	4-wire	-	-	4-wire	-	-
Operating Temperature Range	-40	-	85	-40	-	85	°C
Operating Temperature Range OIML 6000d	-10	-	55	-	-	-	
Storage Temperature Range	-40	-	85	-40	-	85	°C
Humidity NON-CONDENSING	0	-	95	0	-	95	%RH
MEASUREMENT							
Bridge Excitation	4.5	5	5.25	4.5	5	5.25	Volts DC
Sensor Impedance UP TO 18V SUPPLY	320	350	5000	320	350	5000	Ω ⁽¹⁾
Sensor Impedance UP TO 12V SUPPLY	120	350	5000	120	350	5000	Ω ⁽¹⁾
Bridge Sensitivity	-3	-	+3	-3	-	+3	mV/V
Temperature Stability OFFSET	-	1	4	-	5	10	ppm/°C
Temperature Stability GAIN	-	3	5	-	30	50	ppm/°C
Stability with Time OFFSET	-	0.002	0.008	-	0.0035	0.016	%FR
Stability with Time GAIN	-	-	30	-	-	300	ppm/FR ⁽²⁾
Non-Linearity	-	0.0005	0.0025	-	0.0005	0.0025	%FR
Internal Resolution	-	16million	-	-	16million	-	Counts/Divisions
Noise Free Resolution at 1Hz ⁽³⁾	-	200,000	-	-	66,000	-	Counts/Divisions
Noise Free Resolution at 10Hz ⁽³⁾	-	120,000	-	-	40,000	-	Counts/Divisions
Noise Free Resolution at 100Hz ⁽³⁾	-	50,000	-	-	10,000	-	Counts/Divisions
Temperature Measurement Resolution OPTIONAL	-	0.1	-	-	0.1	-	°C
Temperature Measurement Accuracy OPTIONAL	-	1	-	-	1	-	°C

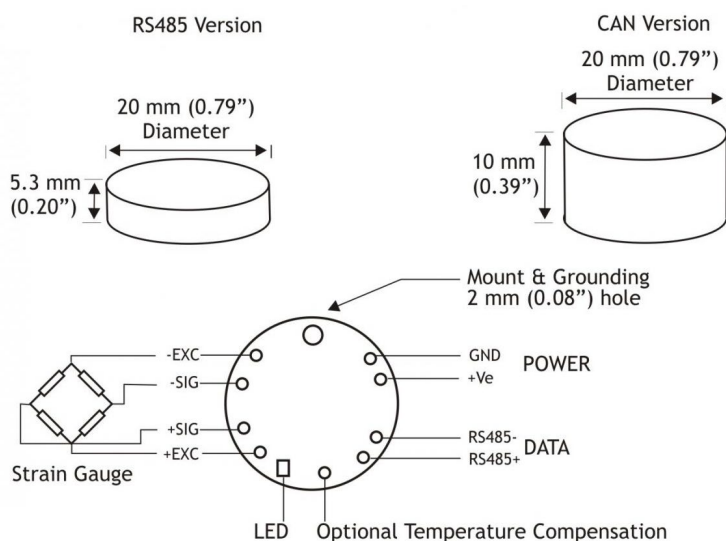
RS485 Data Rate ⁽⁴⁾	2,400	-	230,000	2,400	-	230,000	Baud
CAN Bit Rate ⁽⁴⁾	10,000	-	1,000,000	10,000	-	1,000,000	Bits/Sec

⁽¹⁾ Subject to supply voltage. ⁽²⁾ 1st Year. ⁽³⁾ Stability over 100 second period. ⁽⁴⁾ Update speeds are selectable to 1, 2, 5, 10, 20, 50, 60, 100, 200, 300, 500 samples/second.

Approvals

PARAMETER	VALUE
EMC Directive	2014/30/EC
Low Voltage Directive	2014/35/EC

Outline Dimensions in millimetres



Ordering Codes

CODE	DESCRIPTION
DLCHASC	DCell ASCII Protocol – High Stability.
DLCHMAN	DCell MANTRABUS Protocol – High Stability.
DLCHMOD	DCell MODBUS Protocol – High Stability.
DLCHMCAN	DCell MantraCAN Protocol – High Stability.
DLHCOP	DCell CANopen Protocol – High Stability.
DLCASC	DCell ASCII Protocol – Industrial Stability.
DLCSMAN	DCell MANTRABUS Protocol – Industrial Stability.
DLCSMOD	DCell MODBUS Protocol – Industrial Stability.
DLCSMCAN	DCell MantraCAN Protocol – Industrial Stability.
DLCSCOP	DCell CANopen Protocol – Industrial Stability.
ILE	Inline stainless-steel housing.
EVAL KIT CAN	Complete evaluation kit for CAN.
EVAL KIT 485	Complete evaluation kit for RS485.
EVAL KIT 232	Complete evaluation kit for RS232.
DTEMP	Digital temperature sensor module for wiring to DSCUSB.

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Features

- Inline housing for DCell or ICA amplifiers.
- Small size, 56x28mm excluding glands.
- Machined from solid stainless-steel.
- IP67 rating.



Description

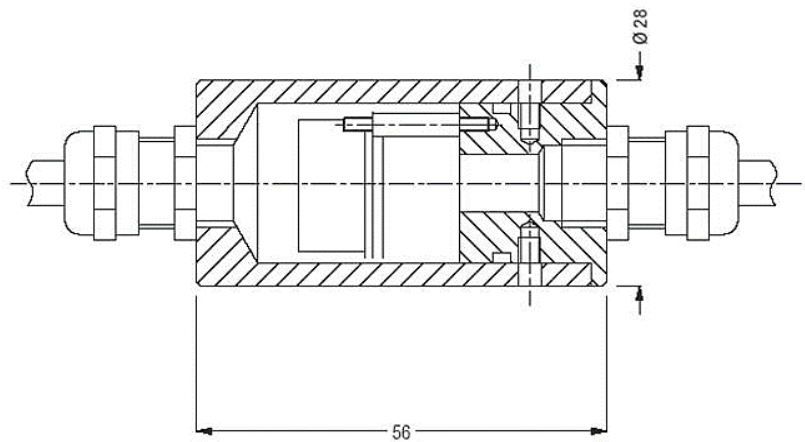
The ILE is an inline stainless-steel housing for digital load cell converters (DCell) and load cell amplifiers (ICA). The ILE enables users to quickly convert any standard load cell output.

Offering robust EMC IP67 protection, the ILE housing is an ideal way to include signal conditioning in your application without taking up much space.

Typical Specification

COVER MATERIAL	Type 304 stainless-steel.
BODY MATERIAL	Type 316 or 17-4 stainless-steel.
THREADED ENTRIES	PG7/20 TPI.
CABLE ENTRIES	PG7 EMX glands (e.g. Jacob 50.007/EMV 14mm AF).

Outline Dimensions in millimetres

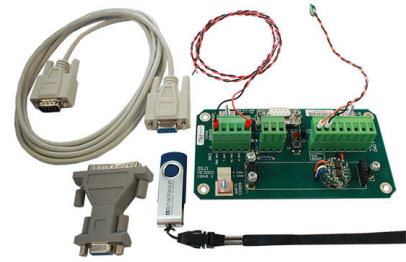


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Features

- Ideal to familiarise yourself with the DCell in test conditions.
- RS232, RS485 or CAN kits available.
- Includes one DCell amplifier.
- Includes software for PC interface.



Description

The DCell Evaluation Kit is an ideal way for users to familiarise with the digitiser modules in test situations. The kit includes everything you need to communicate with an in-cell or card from your PC.

The Evaluation Kit comprises:

- An 8-way screw connector for the DCell.
- A 5-way screw connector for power and RS485 communications.
- A 9-way 'D' Type connector for direct RS232 connection to PC, CAN and RS485.
- Link headers for RS232 or RS485 communication selection.
- Terminating resistor for CAN and RS485.
- On-board temperature sensor for easy evaluation of temperature compensation.
- LED for power indication.
- An evaluation DCell (soldered and wired to the board) of your choice; refer to the ordering codes on **Page 2**.
- A 9 to 25 way 'D' Type adaptor for the PC communications port.
- A 9-way 'D' Type extension lead.
- **RS485 ONLY** - an RS232 to RS485 converter and connecting cable.
- **RS232 ONLY** - a power connection cable.
- **CAN ONLY** - IXXAT USB to CAN compact converter.

Please refer separately to the DCell data sheet above to see more information regarding specifications, dimensions etc.

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