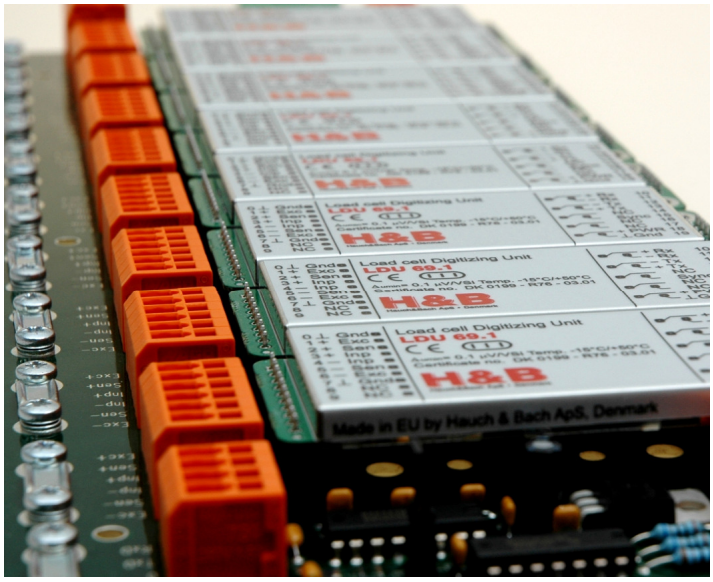
LDU 69.1 - High Precision - R76 Approved

Load cell Digitizing Unit 069.101.5. Ver. 1.20

The LDU 69.1 offers **very high accuracy, sensitivity and stability**. The overall precision is in level with the most expensive laboratory equipment. The LDU 69.1 is often used for **reference equipment** by quality inspectors and manufactures of load cells and weighing devices.
The LDU's are designed to be **embedded into customer's** equipment, to be plugged into a **Unit Adaptor** or integrated with a hosting device.

- **Supports** any weighing or reference application, which requires **precision beyond normal.**
- Offers extreme **stability** over time and temperature.
- **OIML R76 approved** in precision class **II** and **III** for non-automatic weighing **to 0.1µV/VSI.**
- Permit **Multi range** calibration in two or three ranges 1x; 2x; 5x or 2x; 5x; 10x
- Internal **precision reference 2.000.0mV/V** for mV/V calibration.
- **Eases the design** of any digital device dealing with a load cell input.
- **Communicates** via a RS 422/485 full duplex interface in 32 node networks or **point to point**.
- A **graphic presentation, analysis** and set up PC program, **DOP** is available.



The LDU 69.1 qualities

±1000000 counts input signal resolution, 20 nV/count, 172 A/D conversions/sec.
Analog and digital filters offer IIR performance to be set in 6 LP frequency steps up to 3Hz and 60db/dec.
Display output and update performance at 5 updates/second, variable, rolling averaging.
Special pin-out ensures that neighbouring LDU's synchronize their load cell excitation frequency.
7 points linearization performance.
Broadcast command enables up to 32 LDU's to read their input in synchronization.
Can drive 250 ohm load cells, e.g. 4 pc, each 1000 ohm, at 5 Vdc.
Signal conditioning, zero and tare operations convert the load cell output into calibrated units (g; kg; lbs; etc.).
To be designed into customers' PCB or bolted on the side a load cell.
Fits with a selection of Unit Adaptors, offering many I/O facilities and mounting options.
The OIML R76 approval eases the MID approvals of R51, R61 and R107 applications.

The LDU 69.1 is pin and protocol compatible with other members of the LDU family, (68.1/68.2/ 68.3/78.1), thus offering a selection of precision levels, functionality and cost.

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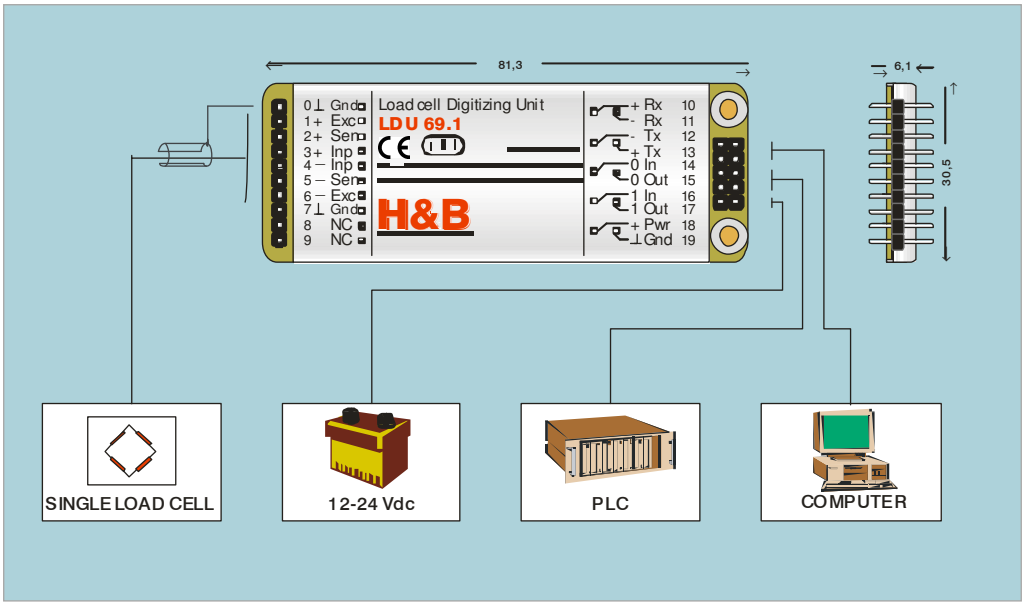

Input and A/D	Linearity	<0,002 % of full scale
	Load cell excitation voltage	5 Vdc polarity shifting at 172Hz
	Load cell drive capability	R_{LC} 250-2000 ohm
	Load cell wiring system	6 wires inclusive sense
	Load cell input range	±3.2 mV/V equivalent to ±16 mVdc
	Load cell input resolution	<20nV/increment.
	A/D-performance	172 updates/second; 1000000 incr. resolution
	Analog LP filter performance	3 Hz; 20 db/decade
	Digital IIR LP filter performance	3-0.2Hz; 40db/decade, selectable in 6 steps
	Averaging period (display output)	5 updates/second, variable rolling averaging

General I/O's	Hardware interfaces	RS485, 32 nodes or RS422 –full duplex
	Data transmission, rates	9.6; 19.2; 38.4; 57.6; 115.2 kB
	Data transmission, protocol	Get results or auto transmit
	Output data rate	21-172 updates/second
	Logic inputs	-
	Logic outputs	-
	Power supply	12-24Vdc max 100mA (12-14 Vdc if R_{LC}<200ohm)

Influences	Temperature effect on Zero	Typical 1ppm/°K, Max 2ppm/°K
	Temperature effect on Span	Typical 1ppm/°K, Max 2ppm/°K
	Temperature range	Operating: -10°C/+40°C; Storage -20°C/+60°C
	Long term stability of Zero	Typical 5ppm/year at room temperature
	Relative humidity	0-95 % non condensing
	EMI	10 V/m (1-2000 MHz)
	General I/O protection, all pins	Reversed polarity, excess voltage and surge
	Vibration	2.5 G operational; 5 G non-operational
	Protection, environment	IP40

Dimensions	Height /length/width	H 6 mm excl. pins; L 81.3 mm; W 30.5
	Weight	27 g (1 oz)
	I/O pins	2x5 pins, 2.54 mm pitch; 1x10 pins, 2.54 mm pitch

Standards	CE EMC directive 89/336	EN 61326/A1 Table A.1. passed
	Certificate of approval	Cert.no. DK 0199-R76-03.01. (EN45.501)
	Certified accuracy	Class III: 10000e; 0,1µV/VSI

Accessories, optional

Enclosures: A number of metal or plastic enclosures are available, all IP65 proofed.
Extensions: A number of Unit Adaptors provides screw terminals, fuse protection, DIN TS35 rail mounting and data bus-converters.
The Unit Adaptors can be built to specific customer demand.

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