

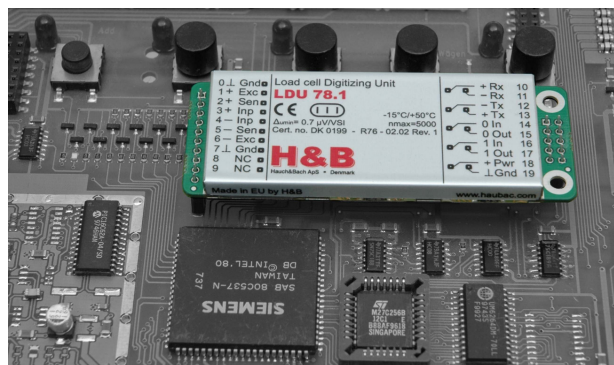
# LDU 78.1 - High Speed - R76 Approved

Load cell Digitizing Unit 078.101.5. Ver. 2.10

LDU 78.1 is especially made for high speed **dynamic weighing** such as **Check-weighers, Filling- or Grading machines** when based on strain gauge load cells. **Logic operations** can be controlled directly via the dual logic inputs and outputs.

The LDU's are designed to be **embedded into customers' equipment**, to be plugged into a **Unit Adaptor** or otherwise integrated with a hosting device.

- **Supports** any automatic weighing device requiring operations at **high speed**.
- **OIML R76 approved** for non-automatic weighing. Eases the MID approvals of R51, R61 and R107 applications.
- A library of specialized firmware for **check weighing, grading or filling applications** is available.
- Internal **precision reference 2.000.0mV/V** for mV/V calibration.
- **Communicates** via a RS 422/485 full duplex interface in 32 node networks or **point to point**.
- Offers **dual logic outputs and dual logic inputs** for various control, filling and sorting operations.
- A **graphic presentation, analysis** and set up PC program, **DOP** is available.



## LDU 78.1 Qualities

±262000 counts input signal resolution, 50 nV/count, 2400 A/D conversions/sec.

Advanced analog and digital filters offer FIR or IIR performance, both to be set in 8 LP frequency steps and up to 100db/dec.

Device output update rate of 600 upd./sec (IIR) followed by an averaging filter to be set from 600 to 0,6 upd./sec.

Can drive 80 ohm load cells, e.g. 4 pc, each 350 ohm or 12 pc, each 1000 ohm. The excitation voltage is 5 Vdc.

Dual logic inputs for position sensors or valve feed back etc. can define a time frame for automatic operations.

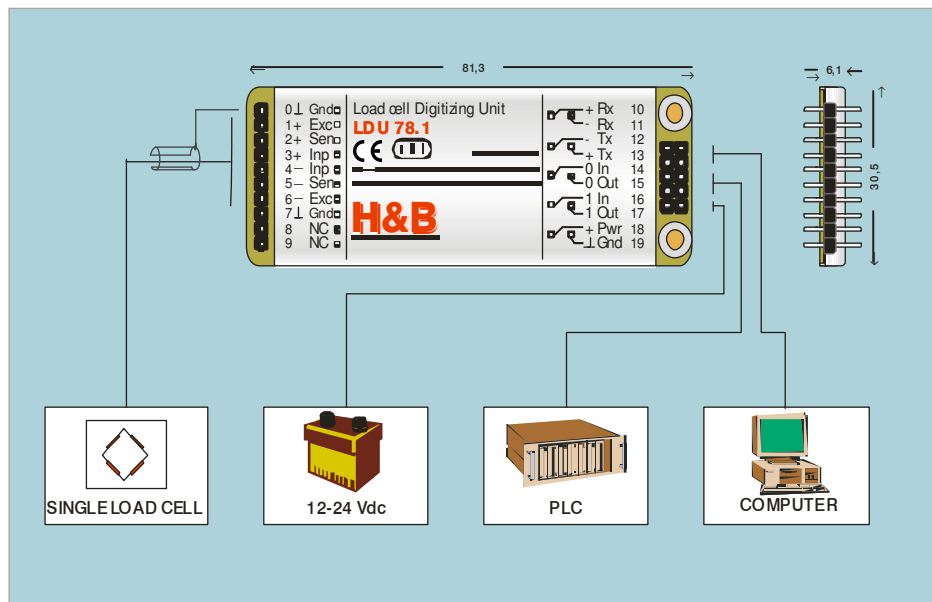
Dual logic outputs provide external control of actuators etc., or for internal computing.

Signal conditioning, zero and tare operations convert the load cell output into a librated unit (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 LDU 78 is pin and protocol compatible with other members of the LDU family, (68.1/ 68.2/ 68.3/69.1), thus offering a selection of precision levels, functionality and cost.



<b>Input and A/D</b>	Linearity	<0,005 % of full scale
	Load cell excitation voltage	5 Vdc
	Load cell drive capability	R <sub>LC</sub> 80-2000 ohm
	Load cell wiring system	6 wires inclusive sense
	Load cell input range	±2.2 mV/V equivalent to ±11 mVdc
	Load cell input resolution	<50nV/incr. (>200 000 counts at 2 mV/V input)
	A/D-performance	2400 updates/second; 260000 incr. resolution
	Analog LP filter performance	17 Hz; 60 db/decade
	Digital IIR LP filter performance	18-0.25Hz; 40db/decade, selectable in 8 steps
	Digital FIR LP filter performance	19.7-2.5Hz, selectable in 8 steps
	Averaging period (display output)	600-0.6 updates/second, selectable in 8 steps

<b>General I/O's</b>	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
	Logic inputs	2 (10-30 V; 1-3 mA; ref to gnd.)
	Logic outputs	2 open collectors (30 Vdc; 0.2 A; ref to gnd.)
	Power supply	12-24Vdc max 100mA (12-14 Vdc if R <sub>LC</sub> <200ohm)

<b>Influences</b>	Temperature effect on Zero	Typical 5ppm/°K, Max 10ppm/°K
	Temperature effect on Span	Typical 4ppm/°K, Max 8ppm/°K
	Temperature range	Operating: -15°C/+50°C; Storage -30°C/+70°C
	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	

<b>Dimensions</b>	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

<b>Standards</b>	CE EMC directive 89/336	EN 61326/A1 Table A.1. passed
	Certificate of approval	Cert.no. DK 0199-R76-02.02. Rev.1 (EN45.501)
	Certified accuracy	Class III: 5000e; 0,7µV/VSI

### Accessories, optional

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