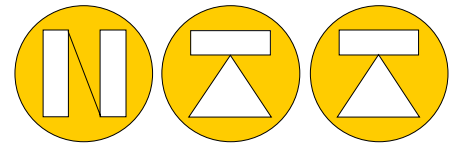
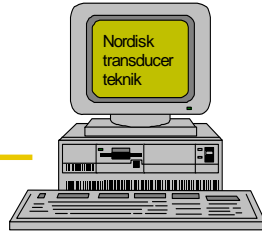


LDU[®] 68.1

Load Cell Digitizing unit

Including 2 remote Inputs
& 2 outputs with set points

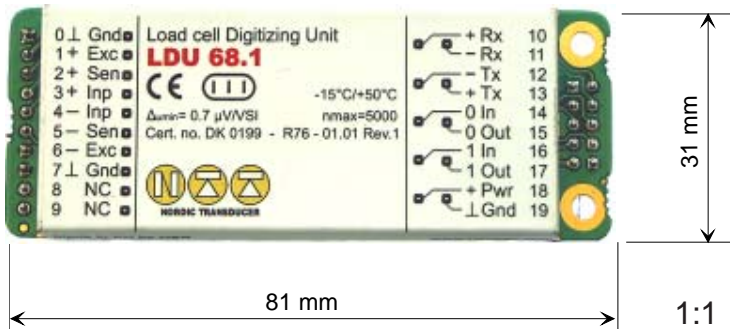


NORDIC TRANSDUCER

LDU 68.1 is produced for all industrial type of weighing jobs, as hopper / silo weighing as typical ones.

LDU68.1 do have +/- 130.000 internal count and this is done at a rate of 90 conversion per sec. All setup and data communication is done by means of data communication to PC or operator terminals.

Advanced TAC security system for control of calibration data change is also a standard part of the LDU 68.1



LDU 68.1 shown here in natural size for direct connection by soldering.
Only 6mm thick

Other way of mounting please look below

81 mm

31 mm

1:1

Data LDU 68.1

| | Data | Comments | Commands |
|---------------------------|--|---|----------|
| Load cell excitation: | 5 VDC | | |
| Load cells: | 100 - 2000 Ohm | (can be = 4 * 1000 Ohm cells) 4 or 6 wire | |
| Load cell input range: | ±19mV | same as ± 3,8mV/V | |
| Zero setting range: | +/-3,0mV/V subtractive | TAC** | ASCII |
| Span max. Digital. | Factor in n increments/mV/V input | TAC | ASCII |
| Calibration security: | | TAC | ASCII |
| A/D conversion: | ±130.000 conv./sec max. at 90 conversions /sec. | | |
| Signal filter adjustable: | LP filter from 0,02Hz -5Hz + additional filter from 0,2 to 3,2 sec in 16 steps of 0,2 sec. | | ASCII |
| Signal filter types: | Gauss; Bessel; Butterworth | | ASCII |
| Display output: | 5 updates per sec. | | ASCII |
| Hardware interface: | RS485, RS422-fuld duplex 32 addresses | | ASCII |
| Transmission speed: | 9.6, 19.2, 38.4, 57.6, 115.2 kB | | ASCII |
| Transmission type: | Auto transmit or get result on command. | | |
| Linearity: | Typical 1:100.000 in worst case 1:50.000 | | |
| Logic inputs | 2; Reversed voltage and ESD protected with function as programmed 10-30V; 1-3mA; Ref. to ground | | |
| Logic outputs | 2 x OC's over current and ESD protected with function as programmed <30Vdc; 0,2A; Ref. to ground | | |
| Temp. effect on zero: | Typical <5ppm/°K, max. 10ppm/°K | | |
| Temp. effect on span: | Typical <3ppm/°K, max. 5ppm/°K | | |
| Temperature range: | Compensated from -15°C to +50°C | | |
| EMC protections: | All I/O pins protected by T-filters, range 0,1 - 1000 MHz at <3V/m | | |
| Power supply: | 12-24 VDC max. 60mA, protected against reversed voltage. | | |

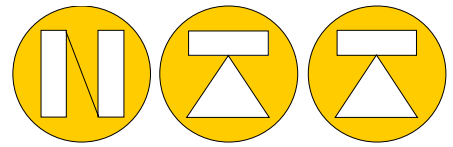
Conform to Council Directive: CE in accordance with both 73/23/EEC, 93/98/EEC and 89/336/EEC

OIML R76: Approved in accordance with EN45.501; Cert. no. DK 0199-R76-02-02
Accuray Class III: 10000e; 0,7microV/VS

(**TAC stands for Traceable Access Code which do secure that all calibration changes gets recorded)

LDU[®] 68.2

Load Cell Digitizing unit



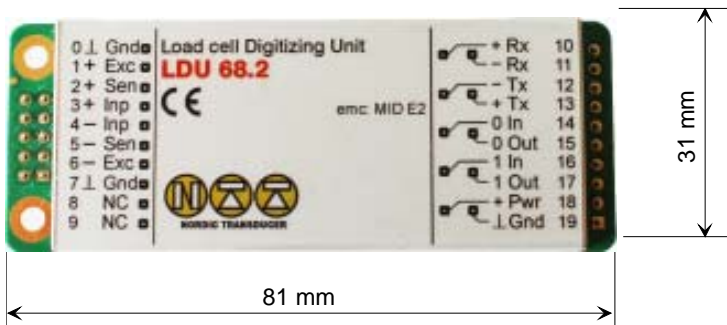
NORDISK TRANSDUCER

**Including 2 remote Inputs
& 2 outputs with set points**

LDU 68.2 is produced for usage in all industrial type of weighing jobs, as hopper / silo weighing as typical ones.

LDU68.2 do have +/- 130.000 internal count and this is done at a rate of 90 conversion per sec. All setup and data communication is done by means of data communication to PC or operator terminals.

Advanced **TAC** security system for control of calibration data change is also a standard part of the LDU 68.2



LDU 68.2 shown here in natural size for direct connection by soldering.
Only 6mm thick

Other way of mounting please look below

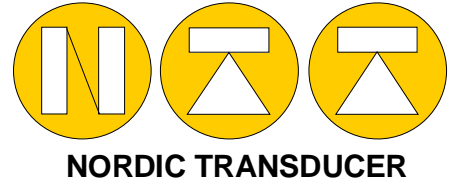
Data LDU 68.2

| | Data | Comments | Commands |
|-------------------------------|--|---|----------|
| Load cell excitation: | 5 VDC | | |
| Load cells: | 100 - 2000 Ohm | (can be = 4 * 1000 Ohm cells) 4 or 6 wire | |
| Load cell input range: | ±19mV | same as ± 3.8mV/V | |
| Zero setting range: | + / 3,0mV/V subtractive | TAC** | ASCII |
| Span max. Digital. | Factor in n increments/mV/V input | TAC | ASCII |
| Calibration security: | | TAC | ASCII |
| A/D conversion: | ±130.000 conv./sec max. at 90 conversions /sec. | | |
| Signal filter adjustable: | LP filter from 0,02Hz -5Hz + additional filter from 0,2 to 3,2 sec in 16 steps of 0,2 sec. | | ASCII |
| Signal filter types: | Gauss; Bessel; Butterworth | | ASCII |
| Display output: | 5 updates per sec. | | ASCII |
| Hardware interface: | RS485, RS422-fuld duplex 32 addresses | | ASCII |
| Transmission speed: | 9.6, 19.2, 38.4, 57.6, 115.2 kB | | ASCII |
| Transmission type: | Auto transmit or get result on command. | | |
| Linearity: | Typical 1:100.000 | in worst case 1:50.000 | |
| Temp. effect on zero: | Typical <25ppm/°K, | max. 50ppm/°K | |
| Temp. effect on span: | Typical <15ppm/°K, | max. 30ppm/°K | |
| Temperature range: | Compensated from -15°C to +50°C | | |
| EMC protections: | All I/O pins protected by T-filters, range 0,1 - 1000 MHz at <3V/m | | |
| Power supply: | 12-24 VDC max. 60mA, protected against reversed voltage. | | |
| Conform to Council Directive: | CE in accordance with both 73/23/EEC, 93/98/EEC and 89/336/EEC | | |

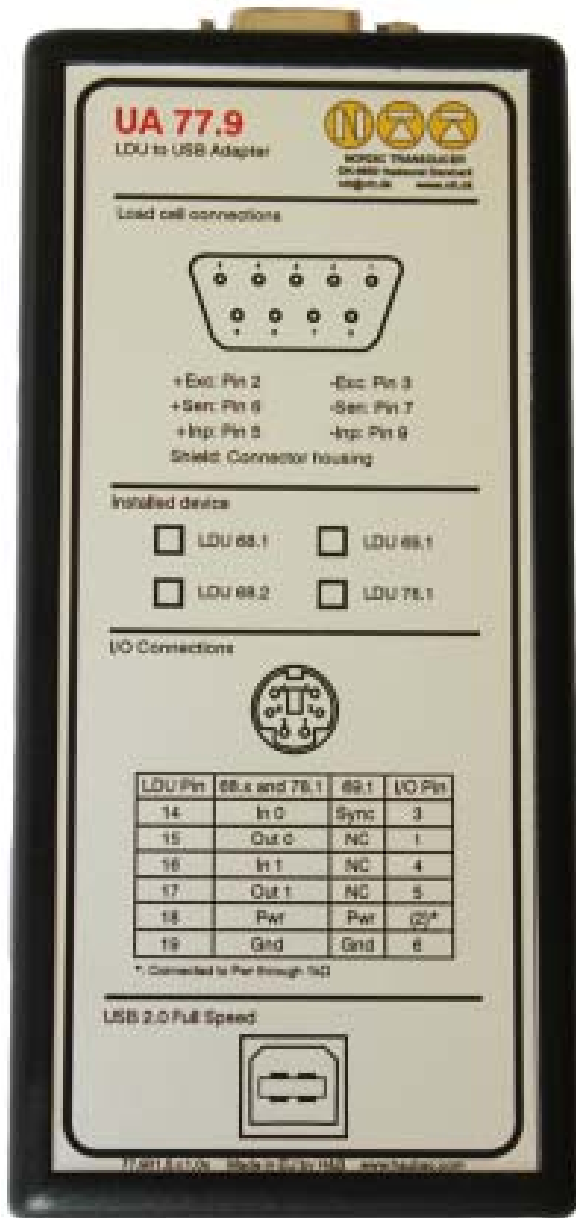
(**TAC stands for Traceable Access Code which do secure that all calibration changes gets recorded)



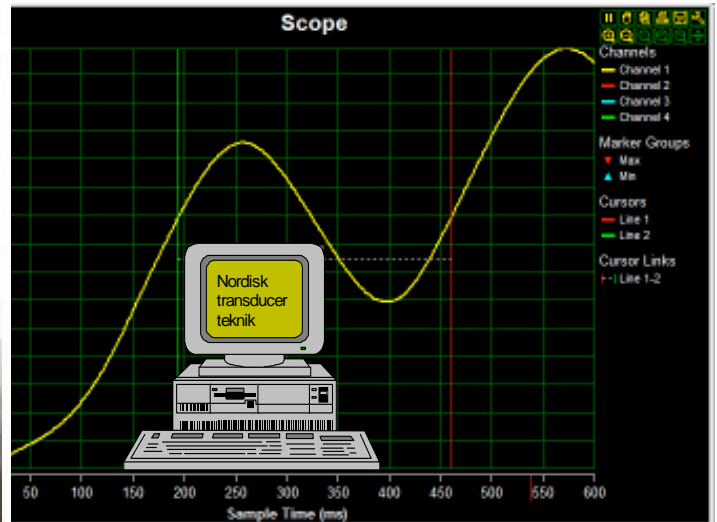
LDU 68.2 here shown with PC board and screw terminals for DIN rail = option **UA73.2**
Similar type of PC board but supplied with an RS232/422 converter = option **UA77.1**



NORDIC TRANSDUCER



USB converter UA77.9 for LDU's

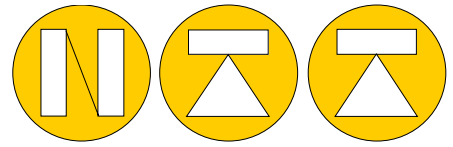


USB converter UA77.9 support all H&B Load cell digitizing units as LDU 68.1, 68.2, 69.1 & 78.1 which all can be used by the UA 77.9 depending of what type of job in question.
Via USB adapter to DOP PC program, it is also possible to set up all calibration parameter also and store these in the LDU xx unit.

This set-up are primarily ment to be used for test purposes as an Analyzing and recording tool with a very good Scope function as well.

I/O functions on the actual LDU can also be activated direct via the UA 77.9 & sat up to the wanted function in the DOP program.





NORDIC TRANSDUCER

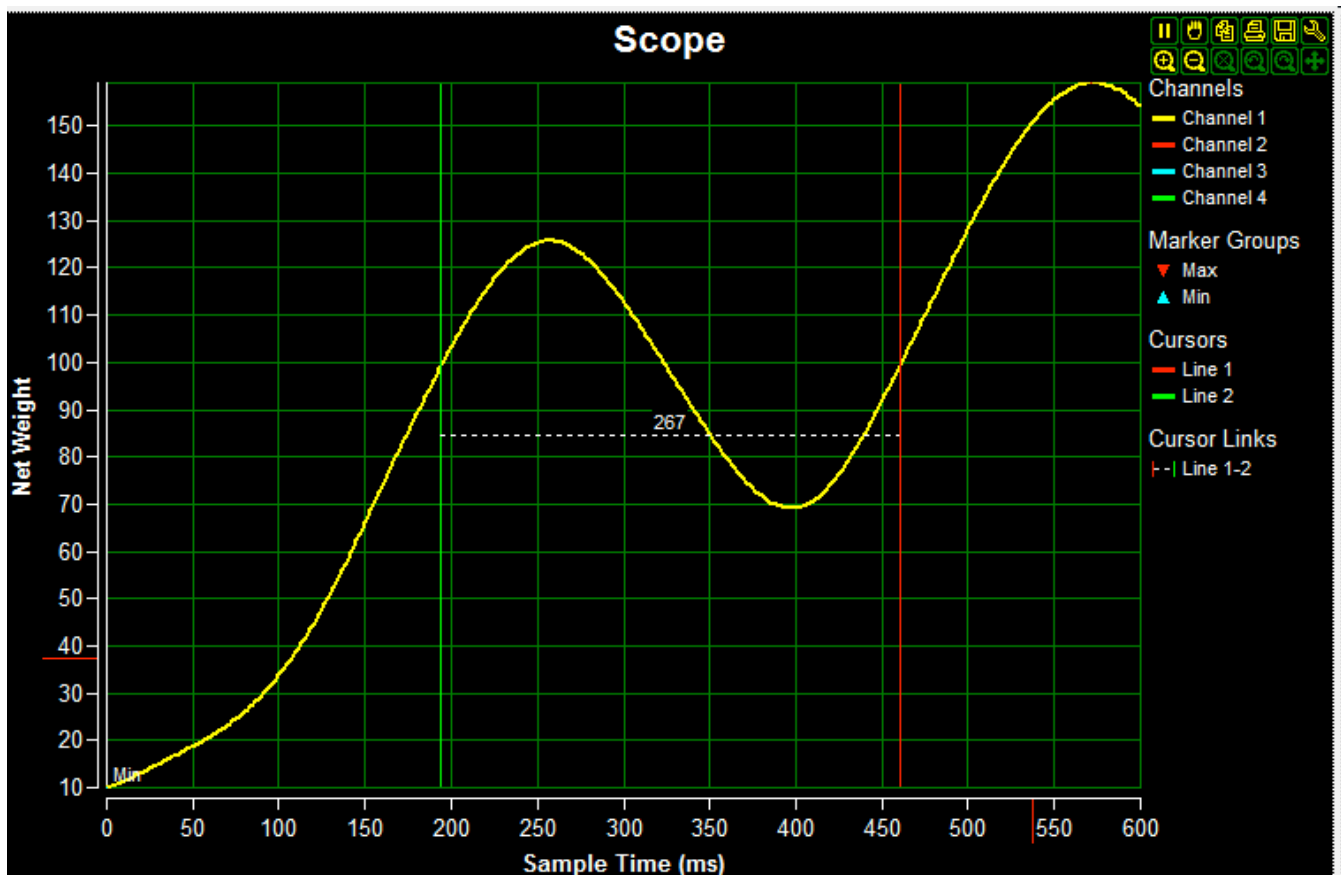


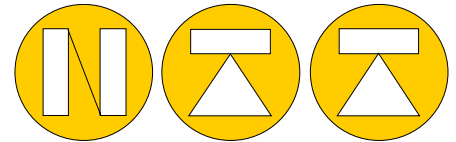
UA 77.9 USB adapter for LDU68 connection to PC



LDU68 I/O options can be connected via this plug in the UA77.9

DOP 4 software can be downloaded free, it can function in many interesting ways also as a Oscilloscope for fault finding in noisy weighing set-ups and the like.

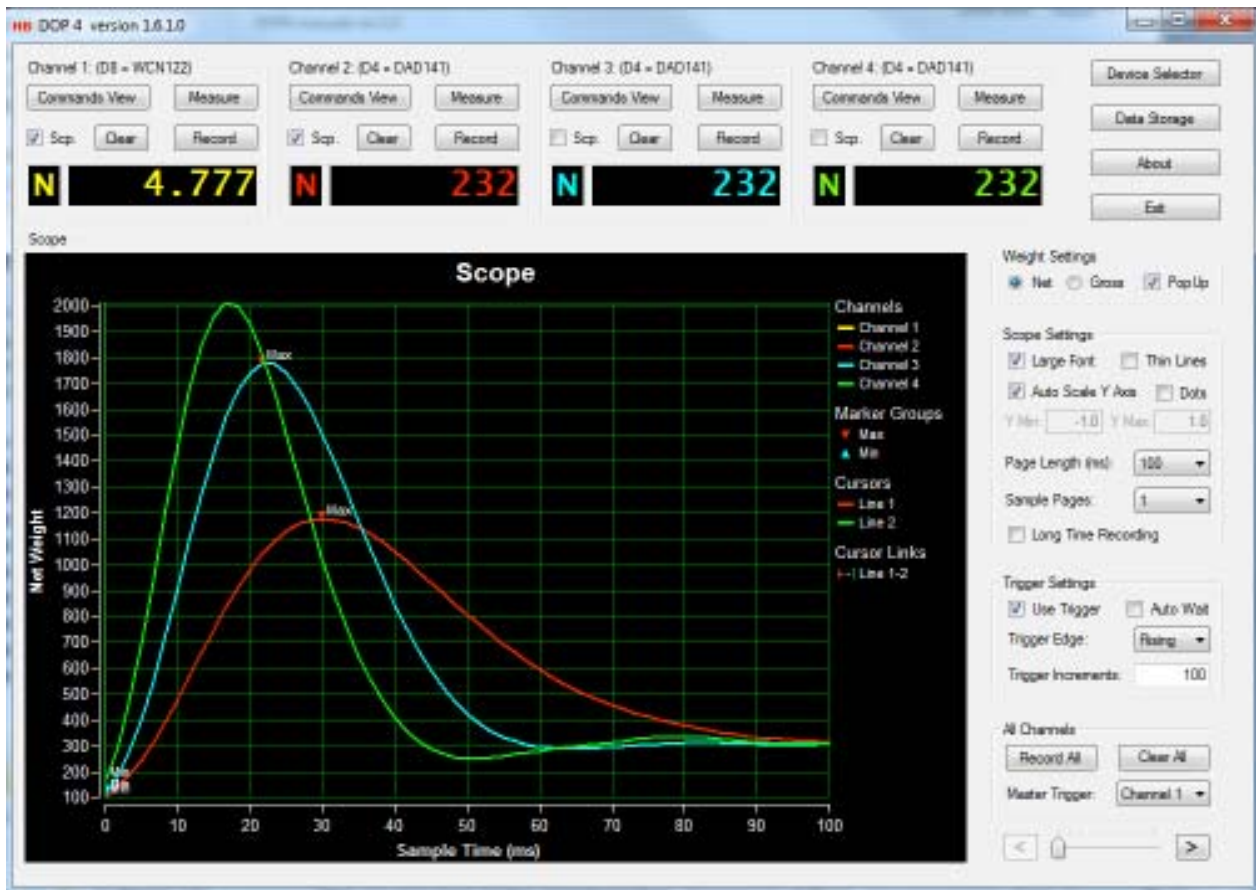




NORDIC TRANSDUCER

Overview

The **DOP 4** is a Windows PC tool for calibrating, analyzing and fine tuning measurement parameters for a number of the Hauch & Bach digital amplifier devices for weighing and force measurements, such as the DAS72.1, DAD141.1 and the LDU series LDU68.x, LDU69.1 and LDU78.1.



The main page consists of four channel groups from which recording, measurement and H&B device calibration can be controlled after one or more H&B devices are connected to the channels from the "Device Selector" dialog.

Special dialogs are available for detailed average measurements.

Analyzing sensor data recordings can be done by examination of the scope object containing the graphical representation of the data recorded.

Recorded sensor data can be stored in separate files via the "Data Storage" dialog. The stored data can later on be reloaded into the scope display.

Calibration and tarring of H&B devices can be done from special "Calibration" and "Filter / Tare" dialogs.

For detail information on measuring, calibration and filtering and the description of specific dialog areas of the DOP 4 application, refer to the specific sections in the "DOP 4 Users Manual" covering these issues.

Start by selecting and assigning an H&B device to a scope display channel.

Channel 1: (D8 = WCN122)

Commands View Measure

Scp. Clear Record

N 4.777

Channel 2: (D4 = DAD141)

Commands View Measure

Scp. Clear Record

N 232

Channel 3: (D4 = DAD141)

Commands View Measure

Scp. Clear Record

N 232

Channel 4: (D4 = DAD141)

Commands View Measure

Scp. Clear Record

N 232

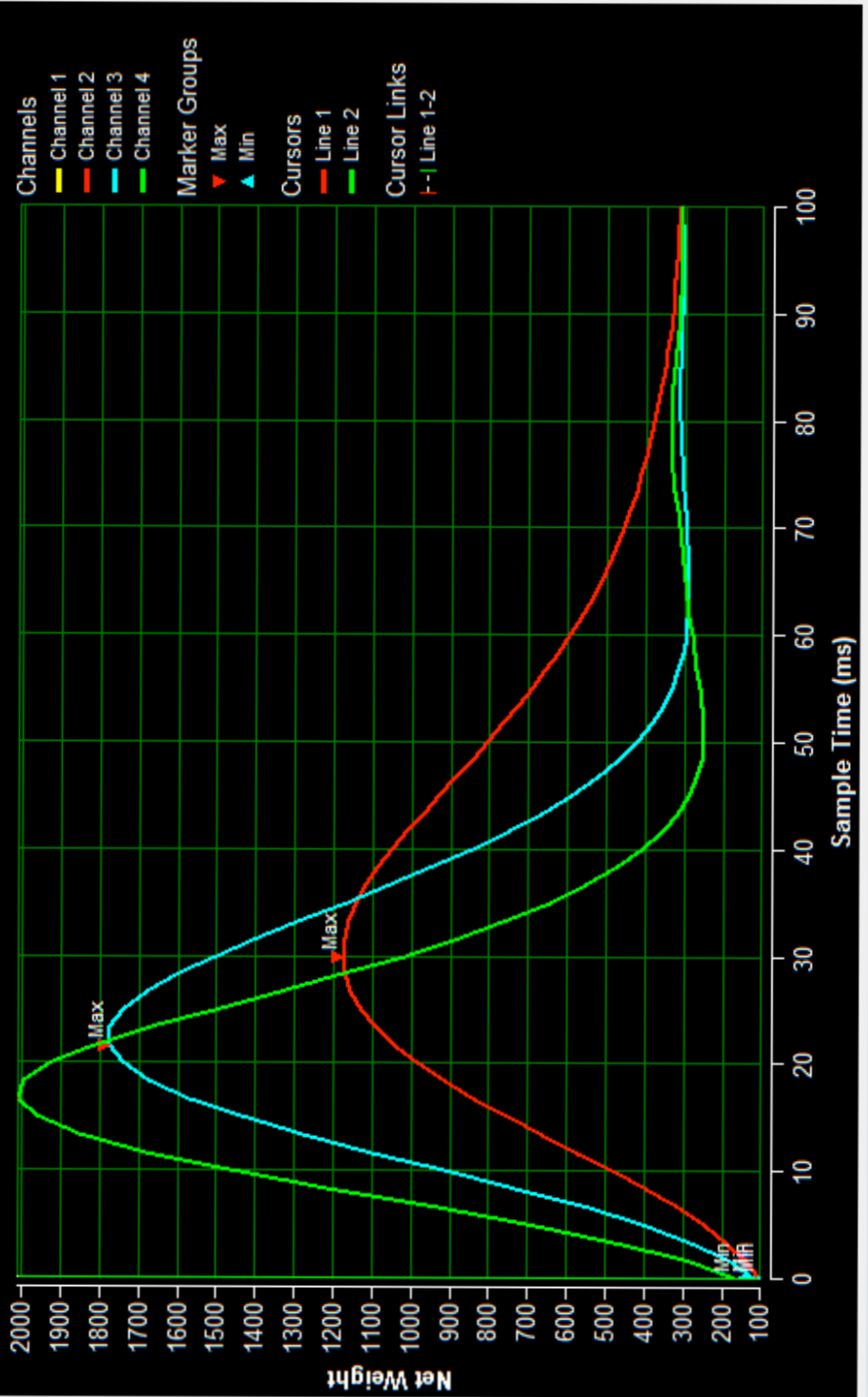
Device Selector

Data Storage

About

Exit

Scope



Weight Settings

Net Gross Pop Up

Scope Settings

Large Font Thin Lines

Auto Scale Y Axis Dots

Y Min: -1.0 Y Max: 1.0

Page Length (ms): 100

Sample Pages: 1

Long Time Recording

Trigger Settings

Use Trigger Auto Wait

Trigger Edge: Rising

Trigger Increments: 100

All Channels

Record All

Master Trigger:

Channel 1