Dewesoft Instructions:

Digital Out on Dewesoft devices

This document briefly instructs how to enable digital outputs on Dewesoft devices.

Following hardware has digital output:

- **Sync-Port** (on every DEWESoft device; only possible if no other device is synched to it)
- **Digital port on amplifier connector** (on SIRIUS-ACC+, STGM+ and STG-LE2B10)

There are two ways to access the digital outputs in DEWESoft software:

- **Alarms** (port changes on condition)
- **Control out** (changing port manually, also during acquisition)

Using Sync Port

To use the Sync Port for digital output is only possible, if it is not used for synchronization to other devices at the same time (e.g. synching multiple DEWE-43 or SIRIUS with the sync cable)!

1. Set Sync Port to Digital Out

Go to DEWESoft > Settings > Hardware Setup > Analog.
When the DEWESoft device is recognized correctly, it should look similar to the screenshot below.
Right-mouse-click on the Sync state field and choose Digital Out (Illustration 1).

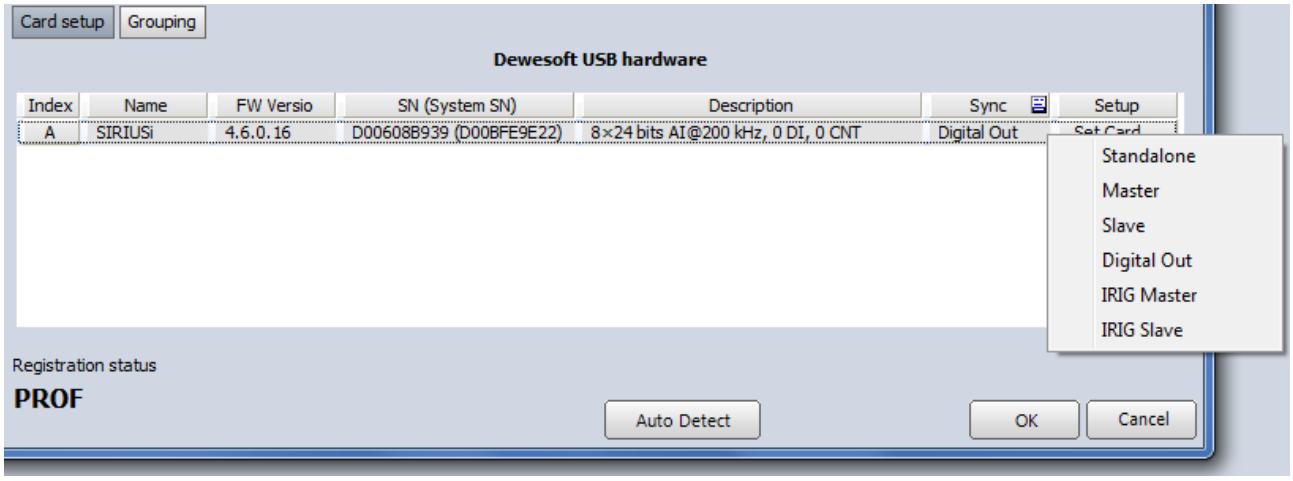

Illustration 1

2. Connect

According to the manual, the Sync Port consists of 3 digital outputs (Clk, Trig, Res), Illustration 2.

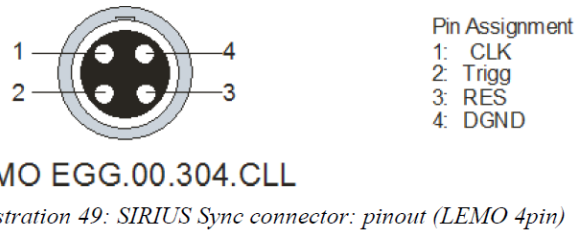

Illustration 49: SIRIUS Sync connector: pinout (LEMO 4pin)

Illustration 2

Here we are using a small box on the 4pin Lemo 00 connector to split up to 3 x BNC ports for easy connection (Illustration 3).

Illustration 3

3. Use Control out

Under “Ch. Setup” > “Ctrl out” enable the channels you want to control (Illustration 4).

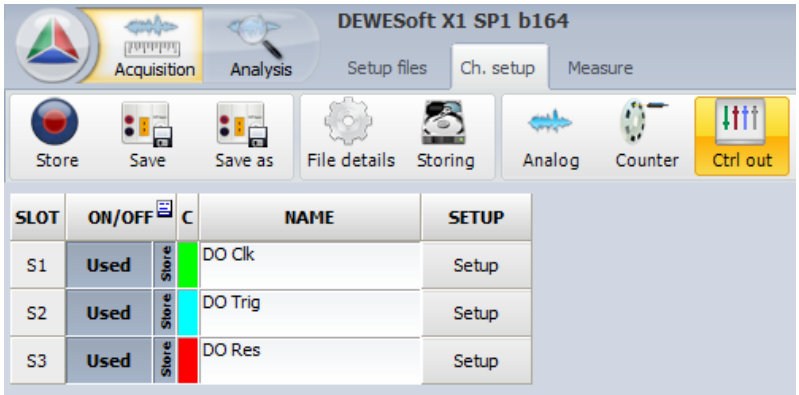

Illustration 4

Now you can add visual Control instruments in Measure > Design > Control Channel.
Select e.g. type “Switch” from the properties on the left side (Illustration 5).

Now you can manually change the status of the 3 pins.

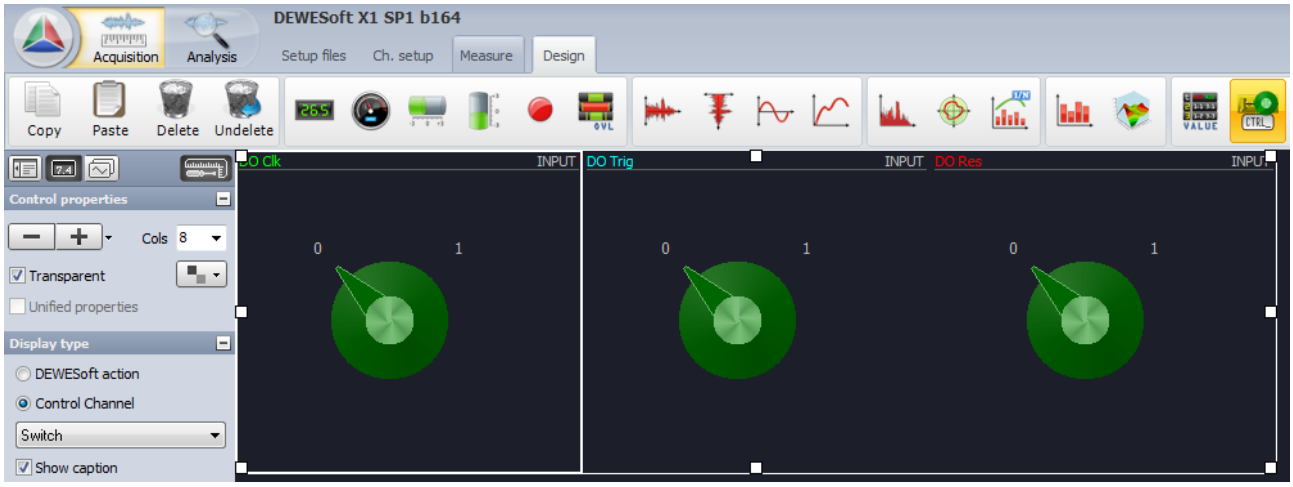

Illustration 5

4. Use Alarms & Events

Let’s see how we can change the digital output on a certain condition.
Go to DEWESoft > Settings > Hardware Setup > Alarms & Events.
Check “Enable alarm monitoring” and “Use DAQ digital output” (Illustration 6).

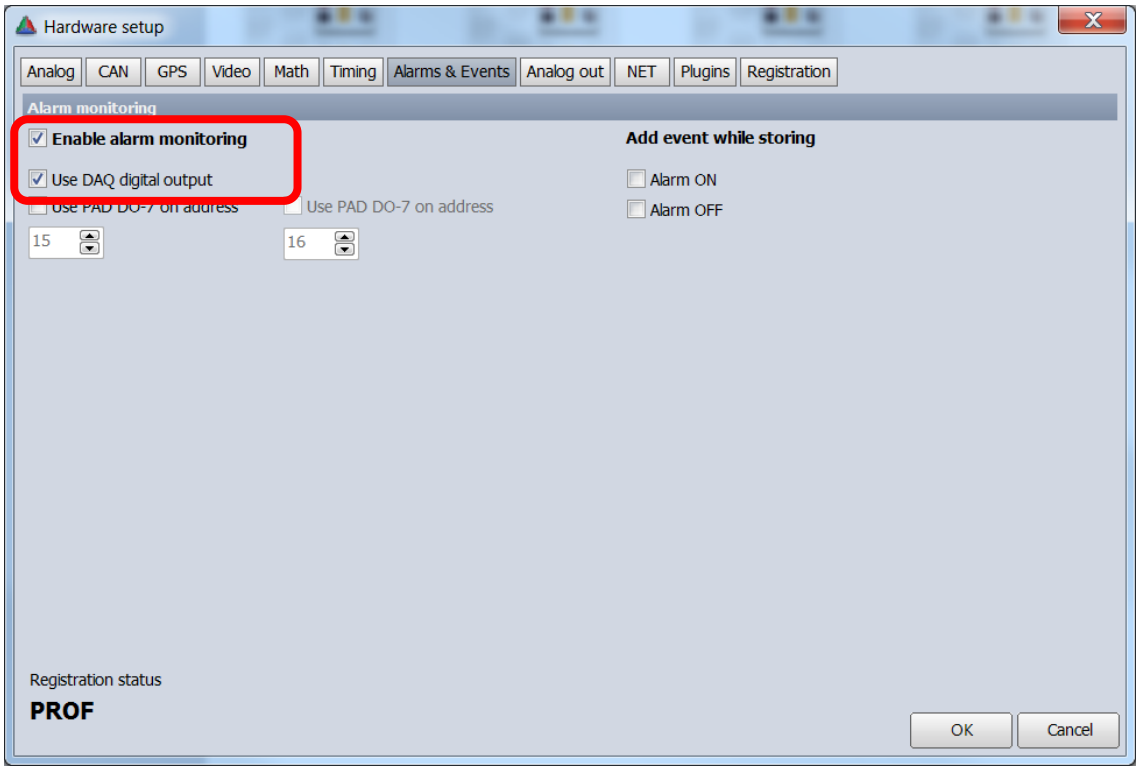

Illustration 6

A new button “Alarms” appears in Ch. Setup > in the “Alarm output selection” enable which pin(s) should be used.

In the example (Illustration 7) we check if the input signal of our sensor on the Analog Input “AI 0” exceeds a level of 0,1 mV/V. On another condition the alarm will be reset.

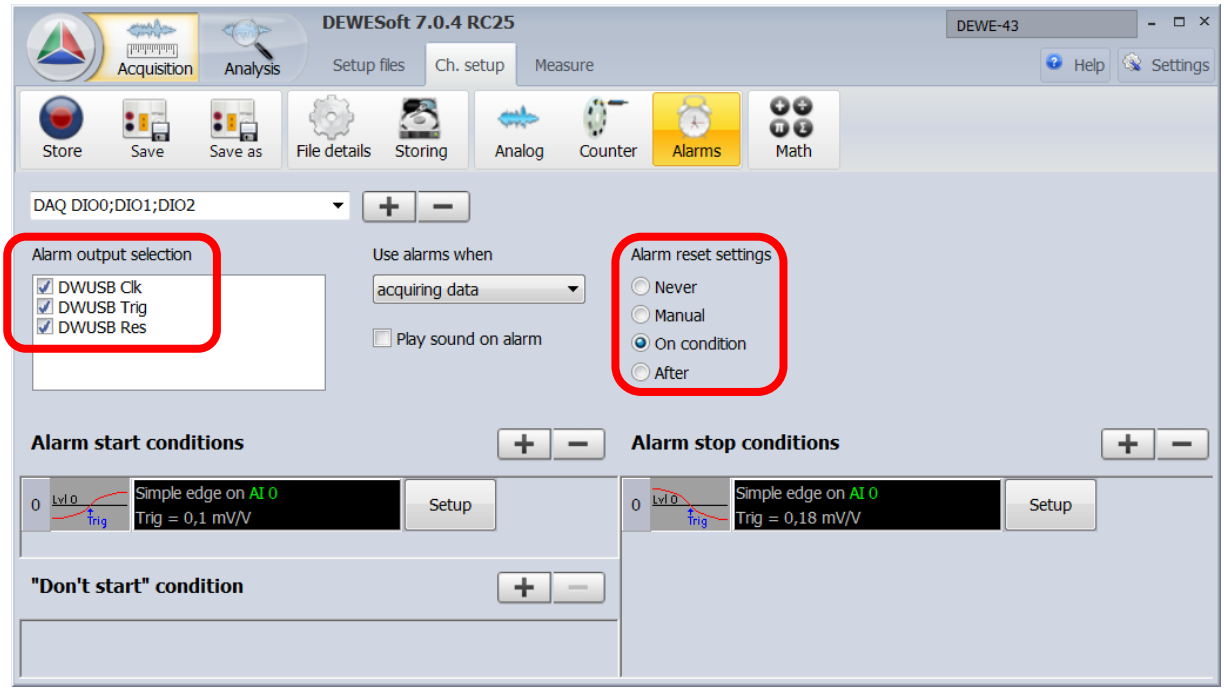

Illustration 7

Using digital port on SIRIUS amplifier

Digital port is available on the following SIRIUS amplifiers:

- SIRIUS-ACC+
- SIRIUS-STGM+
- SIRIUS-STG-LE2B10

There is only one thing to be considered:

Depending on the amplifier a PULL-UP-RESISTOR has to be connected externally to get it working (please check the manual)!

Here is an example for the SIRIUS-ACC+ amplifier:

In the manual the specifications for “Alarm output” are listed with “open collector, max 100mA/24V” (Illustration 8).

Counters (ACC+ type only)	1 counter/3 digital input, fully synchronized with analogue data
Counter Modes	counting, waveform timing, encoder, tacho, geartooth sensor
Input Level Compatibility	CMOS, LVTTL
Input Protection	±25Volt continuous
Alarm output	Open collector, max. 100mA/24Volt

Illustration 8

In the “Ctrl out” section a small circuitry shows how to connect the resistor (Illustration 9):

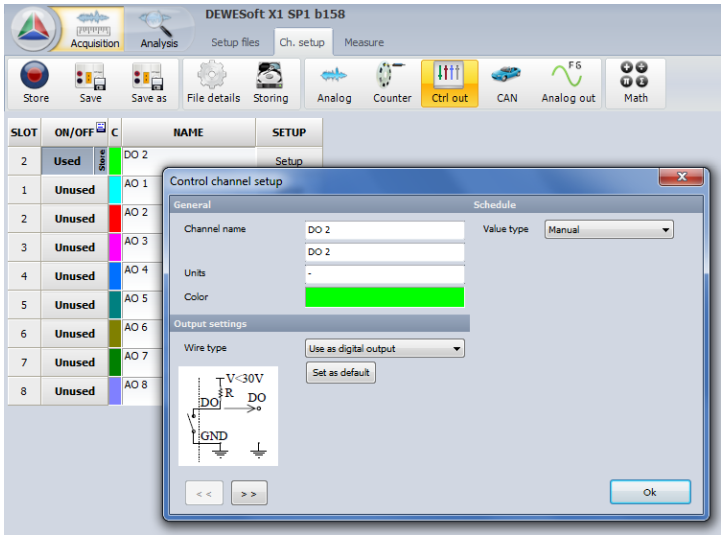

Illustration 9

On the ACC+ amplifier, Lemo 1B 7pin (Illustration 10), you can connect a resistor between pin 6 and pin 4 and calculate the resistor value as follows (10mA is just a suggested current, don't draw more than 100mA).

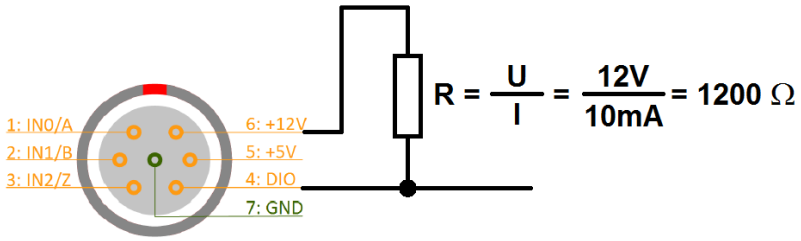

Illustration 10

Again, you can access also this type of digital out using **"Ctrl out"** or **"Alarms"** as shown in the Sync Port example before.