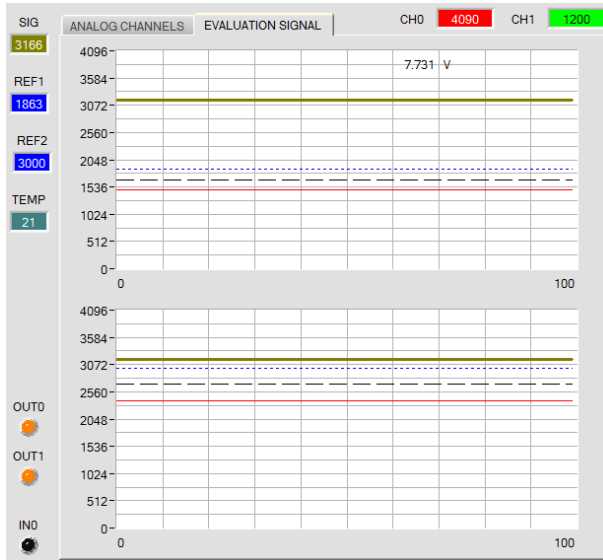


Changes after Software Update from SPECTRO2-Scope V1.7 to V1.8

Change 1:

THRESHOLD MODE = 2 TRSH SIG has been renamed to **2 TRSH SIG**.
The evaluation has remained the same.



THRESHOLD MODE = 2 TRSH SIG:

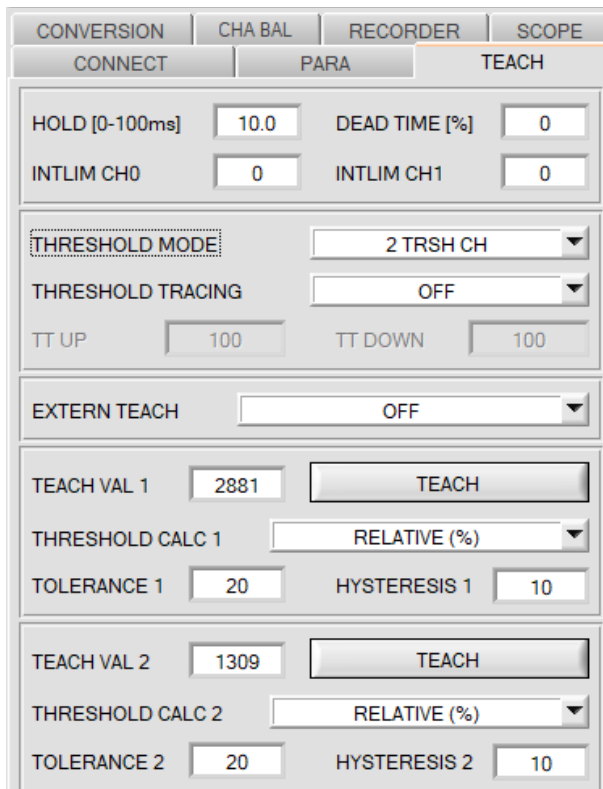
2 switching thresholds are available in this mode.

Switching threshold1(2) = **REF1(2) – TOLERANCE 1(2)**
Hysteresis threshold1(2) = **REF1(2) – HYSTERESIS 1(2)**

When the current **SIG** measurement value falls below switching threshold 1 or 2, the digital output **OUT0** or **OUT1** is set to error. When the current measurement value rises above hysteresis threshold 1 or 2 again, the error output is reset again.

Change 2:

THRESHOLD MODE = 2 TRSH CH was implemented.



THRESHOLD MODE = 2 TRSH CH:

Two switching thresholds are also available in this mode.

Switching threshold1(2) = **REF1(2) – TOLERANCE 1(2)**
Hysteresis threshold1(2) = **REF1(2) – HYSTERESIS 1(2)**

In contrast to **2 TRSH SIG**, **SIG** will not be evaluated here, but **CH0** and **CH1**.

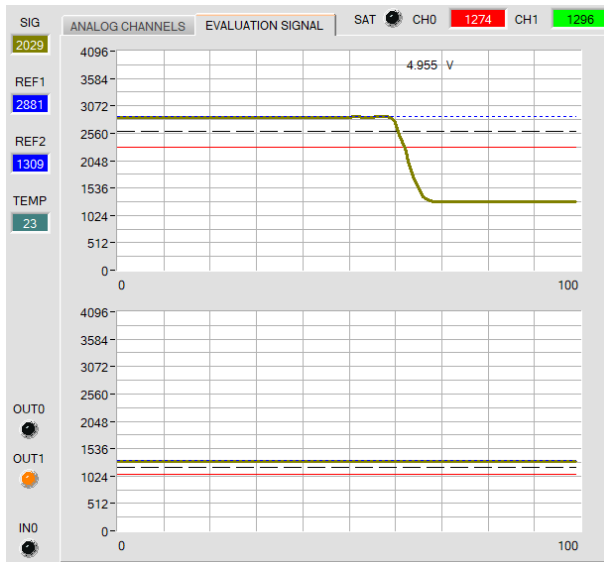
If the current measured value **CH0** or **CH1** undercuts the switching threshold 1 or 2, the digital output **OUT0** or **OUT1** will be set to fault.

If the current measured value then exceeds the hysteresis threshold 1 or 2 again, the fault output will be rescinded.

PLEASE NOTE:

OPERATING MODE = DIFFERENTIATOR and **DELTA CH SIG INTEGRATOR** are not available if **THRESHOLD MODE = 2 TRSH CH**, as the process only works with the measured value **SIG** in both cases.

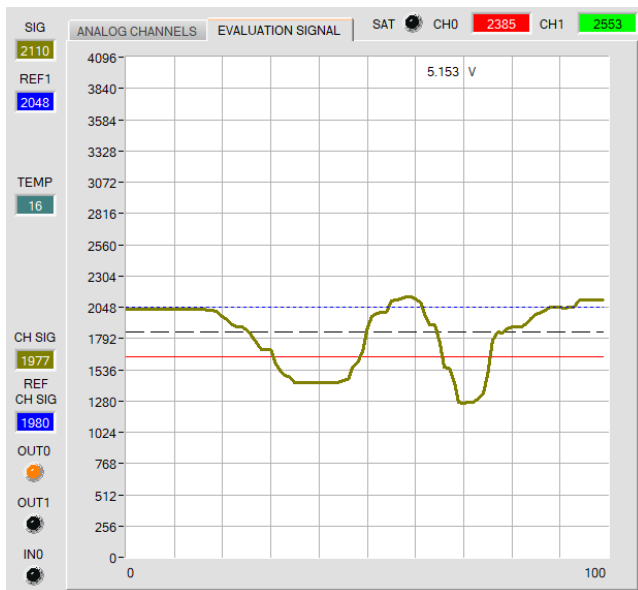
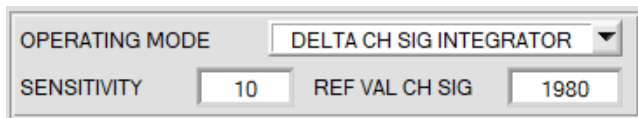
EXTERN TEACH = MAX, MIN and **(MAX+MIN)/2** with **THRESHOLD MODE = 2 TRSH CH** is also not possible, as the min./max. search relates only to **SIG**.



SIG is no longer used to switch the digital outputs, but is still calculated and displayed, as it can be issued in analogue form.

Change 3:

OPERATING MODE = DELTA CH SIG INTEGRATOR was implemented.



With **DELTA CH SIG INTEGRATOR** the deviation of **CH SIG** from a reference value for **CH SIG (REF VAL CH SIG)** is determined, standardized to 4096 and added with 2048.

SIG = $((\text{REF CH SIG} - \text{CH SIG}) \text{ via number SENSITIVITY values}) * 4096 / \text{REF CH SIG} + 2048$

$$\text{SIG} = \frac{\sum_1^{\text{Sensitivity}} (\text{REF CH SIG} - \text{CH SIG})}{\text{REF CH SIG}} * 4096 + 2048$$

CH SIG: result of the calculation method set under **EVALUTION MODE**

REF CH SIG: corresponds either with **REF VAL CH SIG** or with **TEACH EXTERNAL = DIRECT** or **DYN** is set to the value of **CH SIG**.

SENSITIVITY determines the summation factor **REF CH SIG - CH SIG**.

Example:

If e.g. **Sensitivity=10** has been set, 10 detected values **REF CH SIG - CH SIG** are summated.

The sum is standardised to 4096.

The standardised value is added with 2048.

You receive a value of 2048 for **SIG** if the sum of **REF CH0 SIG - CH SIG = 0**.

If e.g. the clearance to the surface or the surface property changes, you will receive a peak below or above 2048.

PLEASE NOTE:

The **INTEGRATOR** function is not available with **THRESHOLD MODE = 2 TRSH CH**.