OTT HydroMet
Insights for Experts

TECH TIP: ALERTS USING OTT NETDL

6 EXAMPLES FOR ALERTS USING OTT NETDL

1. Simple alert via SMS (battery voltage)
2. Level threshold with gradient for increasing the data transmission interval
3. Status alert with external measuring interval
4. Special alert condition (amount of precipitation) for triggering a sampling by pulse
5. Special alert condition (time-controlled "burst mode") for influencing the measurement and storage interval
   (storage interval only for summation)
6. Take picture and send in case of alert (see also blog "netDL and IP Camera")

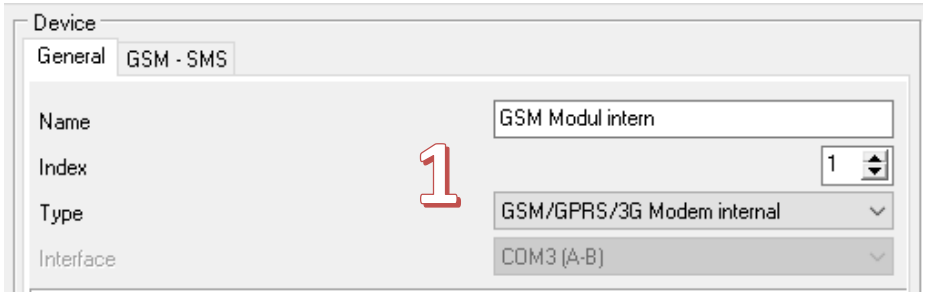
PRELIMINARY REMARKS

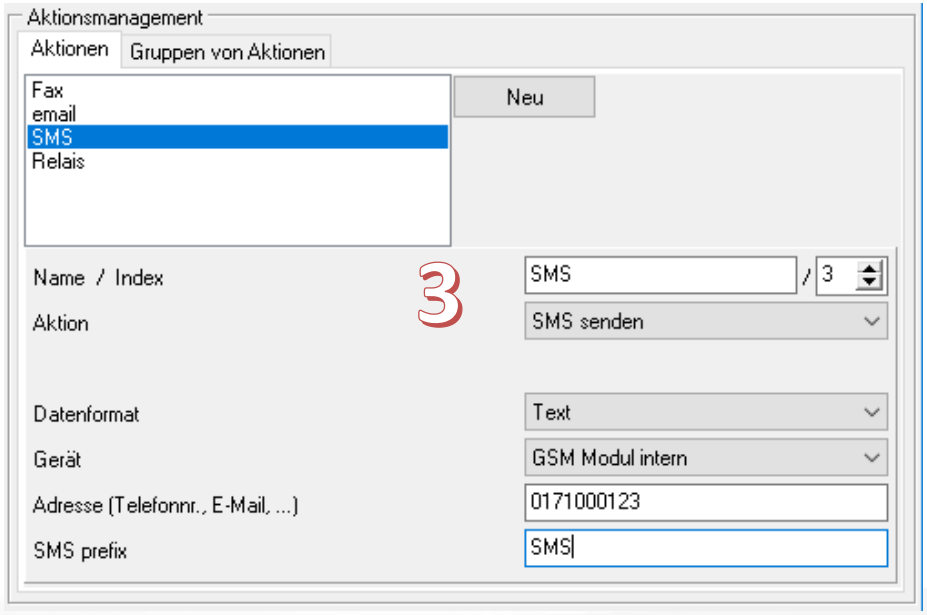
- This tech tip requires the experienced use of the OTT data logger operating program as well as the communication with the OTT netDL via USB cable (see also OTT training program).
- The examples shown in this TechTip can be modified according to your specific requirements.
- The first two examples are often used in practice, while the other examples are of a special kind to demonstrate the flexibility of the OTT netDL.
- In the OTT netDL training course we will also be happy to discuss your specific alarming task. Or you can order a customized configuration contacting HydroService.
- Please note: not every possible configuration makes sense! In particular, many and fast measurement and transmission intervals should be used with care, otherwise reliable operation is not guaranteed.

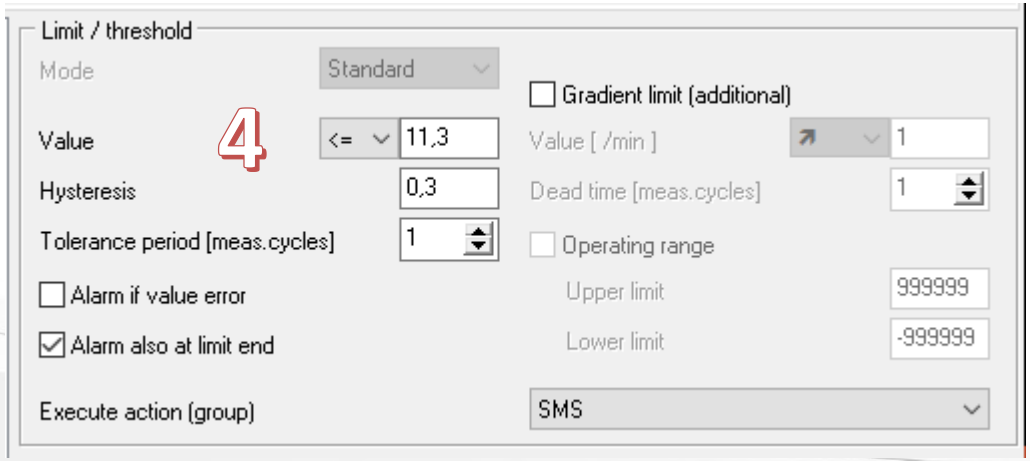
1. SIMPLE ALERT VIA SMS (BATTERY VOLTAGE)

- In order to set up an SMS alert when the voltage falls below a preset value follow the step by step guidance below

1) Configure the GSM modem (internal or external) in the "Device" section.
2) SIM card inserted (enter PIN code if required).
3) In the "Action Management" section, set up the "SMS" action and enter the phone number of the recipient.
4) Insert and configure a threshold value in the "Power Supply" channel.





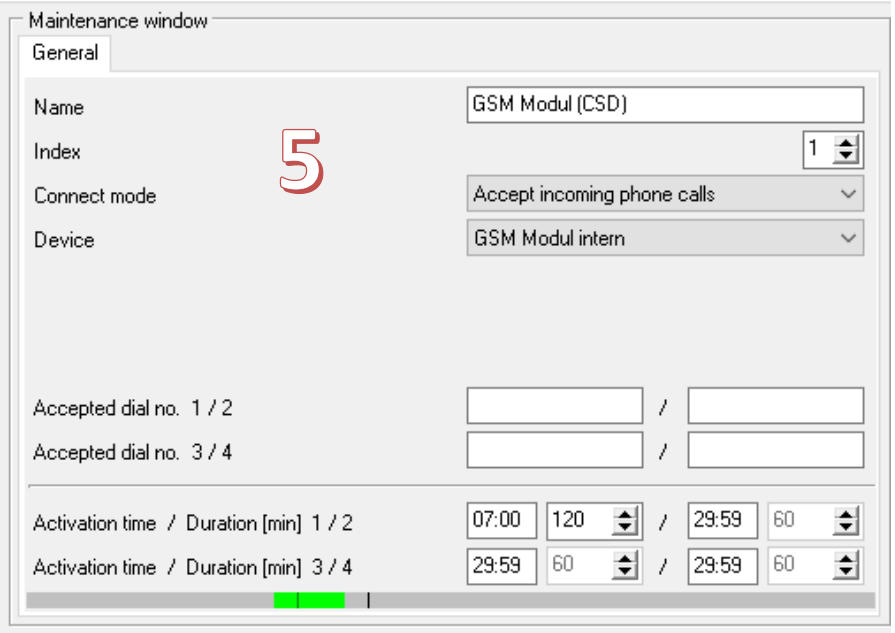


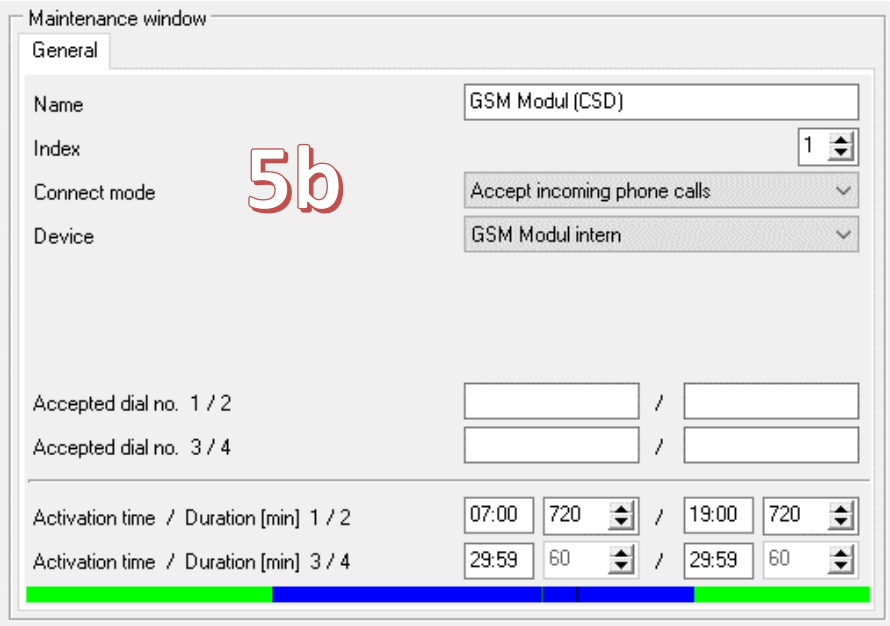
1. SIMPLE ALERT VIA SMS (BATTERY VOLTAGE)

5) Optional: Set up a maintenance window.

In the first example, the modem is switched on at 07:00 (logger time) and switched off after 120 minutes at 9:00.

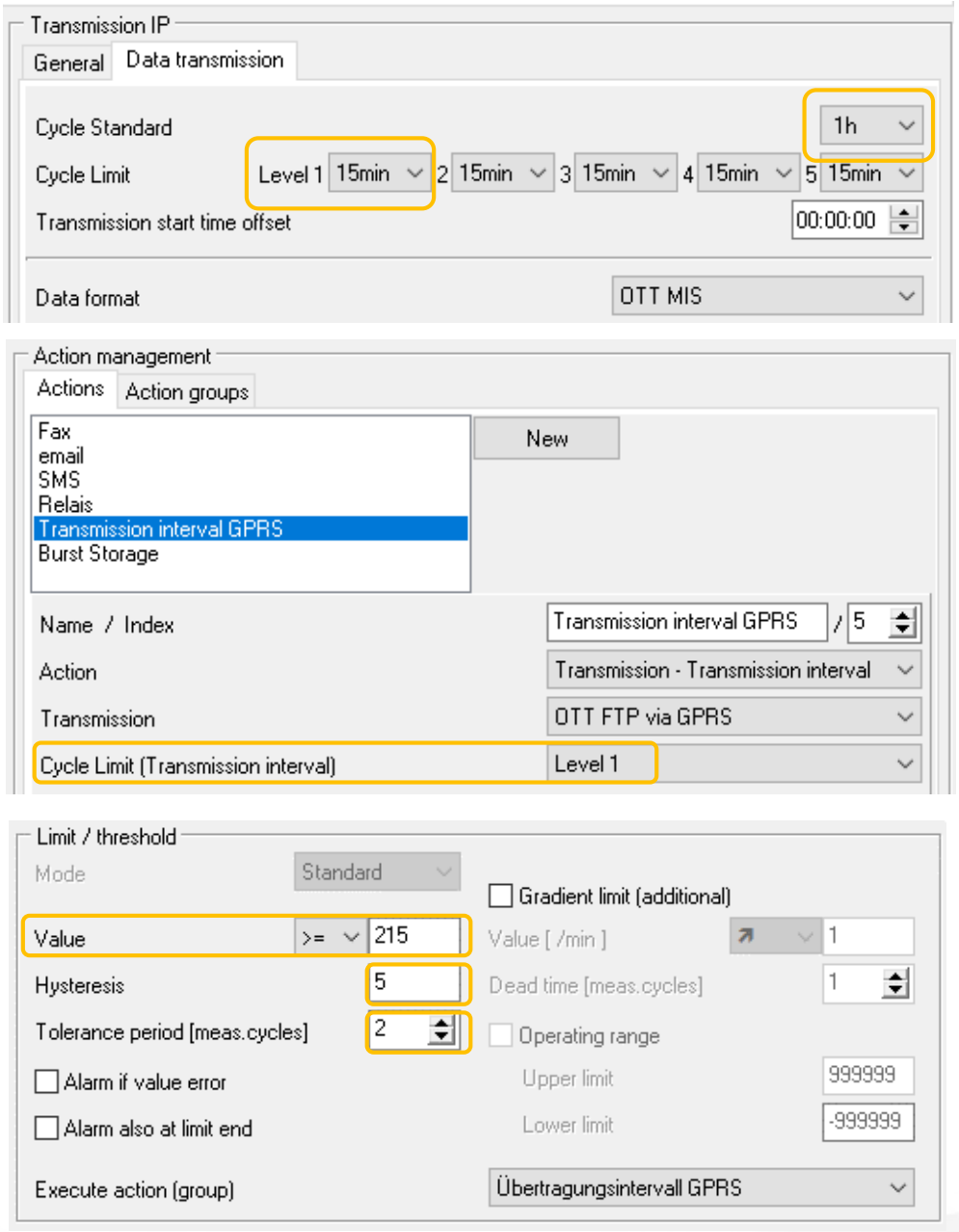
To switch the modem continuously on, we recommend using two maintenance windows of 730 min (12 h) each. The activation times must be offset by 12 h respectively (see second example – activation times 07:00 h and 19:00 h).





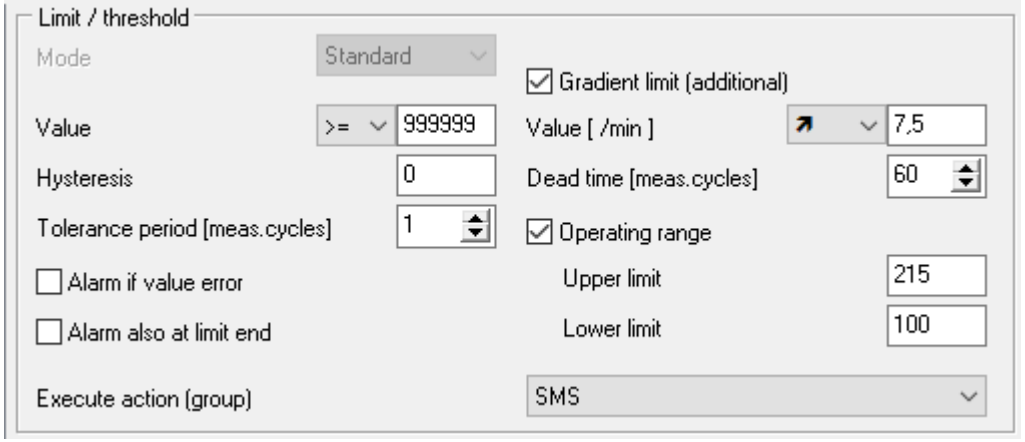
2. THRESHOLD LEVEL & TRANSMISSION INTERVAL

- An SMS Alert can also be set up for other parameters (e. g. water level) - this follows the same procedure as in previous chapter for sending SMS if the voltage drops below a certain level.
- In this example, the data is normally transferred to the configured server every 60 min (1 h). As soon as the threshold value of 215 cm has been reached the system switches to the cycle limit set up for level 1 (see action management) so the data is transmitted every 15 minutes. You can also define additional limit values and cycles.
- Hysteresis prevents the threshold value and standard cycle from being changed again and again in the event of minor fluctuations around the threshold value, i. e. the standard cycle is not used again until the value falls below (215 - 5 =) 210 cm.
- The configured tolerance time (measuring cycles) requires the threshold value to be exceeded for a defined number of measuring cycles in succession before the alert condition is activated (2 in this example).



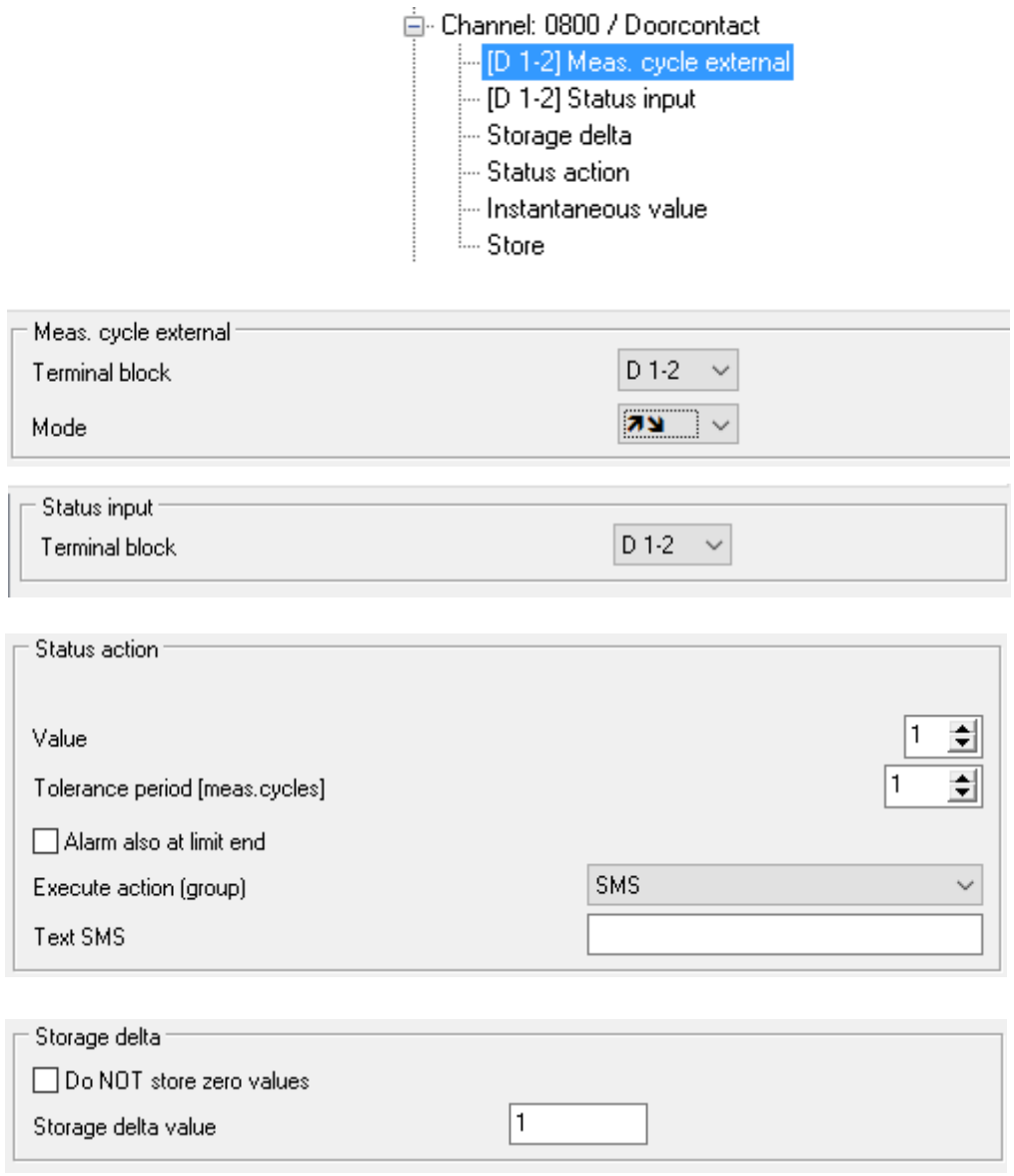
2. GRADIENT & SMS

- You can also use a particularly rapid rise of the water level as an trigger to e. g. send an SMS.
- If necessary, define a working range for which the gradient threshold value is evaluated (in the used example: within the level range between 100 cm and 215 cm). If the level in this range increases by 7.5 cm or more (e. g. from 130 cm to 138 cm) in the measurement interval (here 1 min), the limit value is activated once (so that a changeover of the threshold value cycle makes no sense, but e. g. an SMS can be send). For the set dead time of (in the given example) 60 min, there is no further alert triggered on basis of the gradient limit.



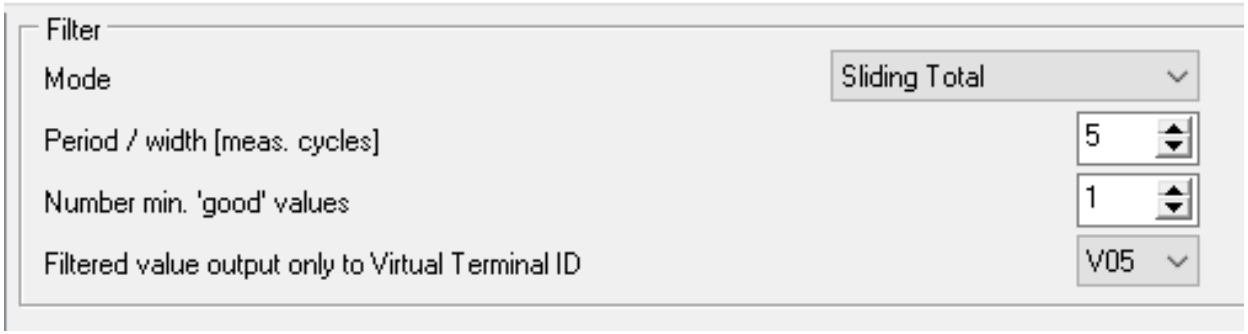
3. STATUS ALERT / "EXTERNAL MEASURING INTERVAL" MODULE

- A special feature of the OTT netDL is triggering via an interrupt. This means that the status does not have to be queried in a fast regular interval, but a change (up, down, up&down) is recorded immediately (if at least 5 seconds have passed).
- The current status value is then queried in the status input.
- The actual status action is triggered with the set value.
- Attention: Fast status changes within 5 s after the initial status change are ignored! So if fast status changes can happen, it is recommended to create an additional channel which would check the status every minute so that the latest status is registered reliable in that channel and the other is used for fast reacting (e. g. to trigger a camera).



4. SPECIAL ALERT FOR SAMPLING

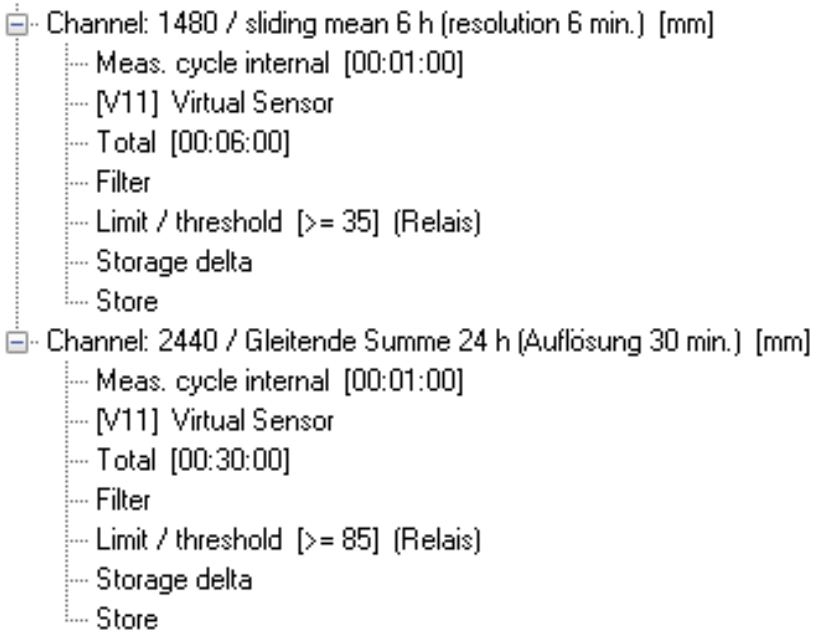
- To trigger an alert as soon as a specific rain rate (quantity over duration) is reached the filter module “running total” is recommended.
- A resolution of 1 min can be maintained for up to 60 min.

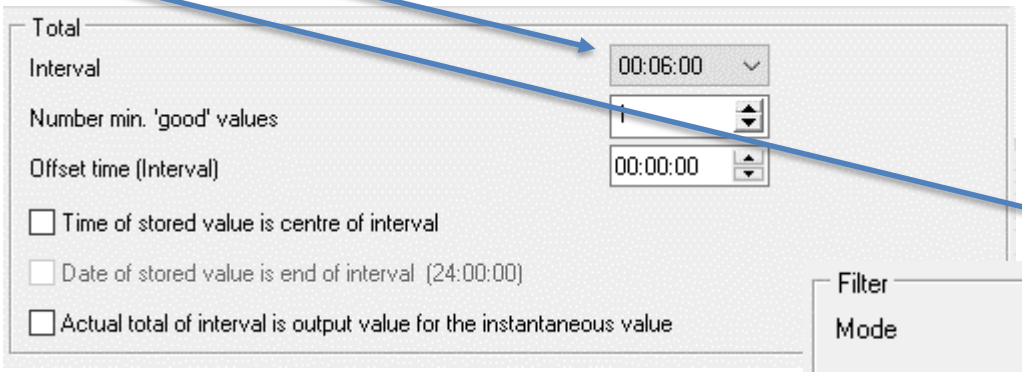


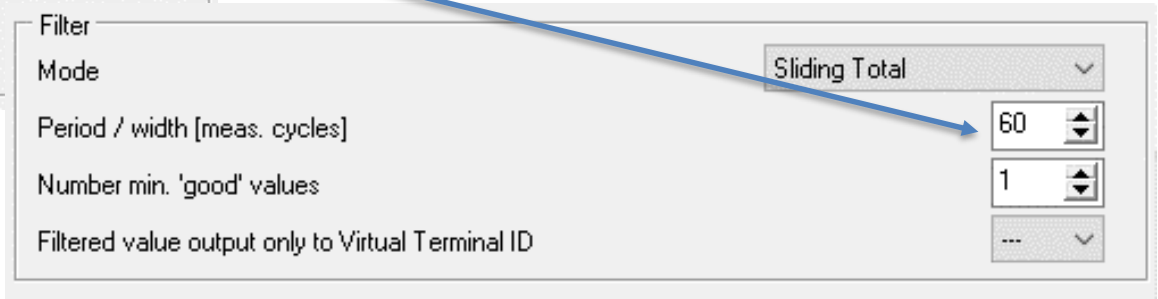
- Channel: 0100 / Precipitation impuls [mm]
  - Meas. cycle internal [00:01:00]
  - [D 1-2] Pulse input
  - Virtual Terminal [V11]
  - Filter [V05]
  - Filter [V06]
  - Storage delta
  - Store
- Channel: 1005 / Floating sum 5 min. [mm]
  - Meas. cycle internal [00:01:00]
  - [V05] Virtual Sensor
  - Limit / threshold [>= 15] (Relais)
  - Storage delta
  - Store
- Channel: 1060 / Floating sum 1 h [mm]
  - Meas. cycle internal [00:01:00]
  - [V06] Virtual Sensor
  - Limit / threshold [>= 25] (Relais)
  - Storage delta
  - Store

4. SPECIAL ALERT FOR SAMPLING

- Running totals with periods greater than 1 h must be structured in two stages.
- E. g. for a running total of 6 h: first a sum with a fixed interval of 6 minutes (in module ‘Total’), then based on this a running total of Period (in module ‘Filter’), 60 x 6 minutes = 6 h.

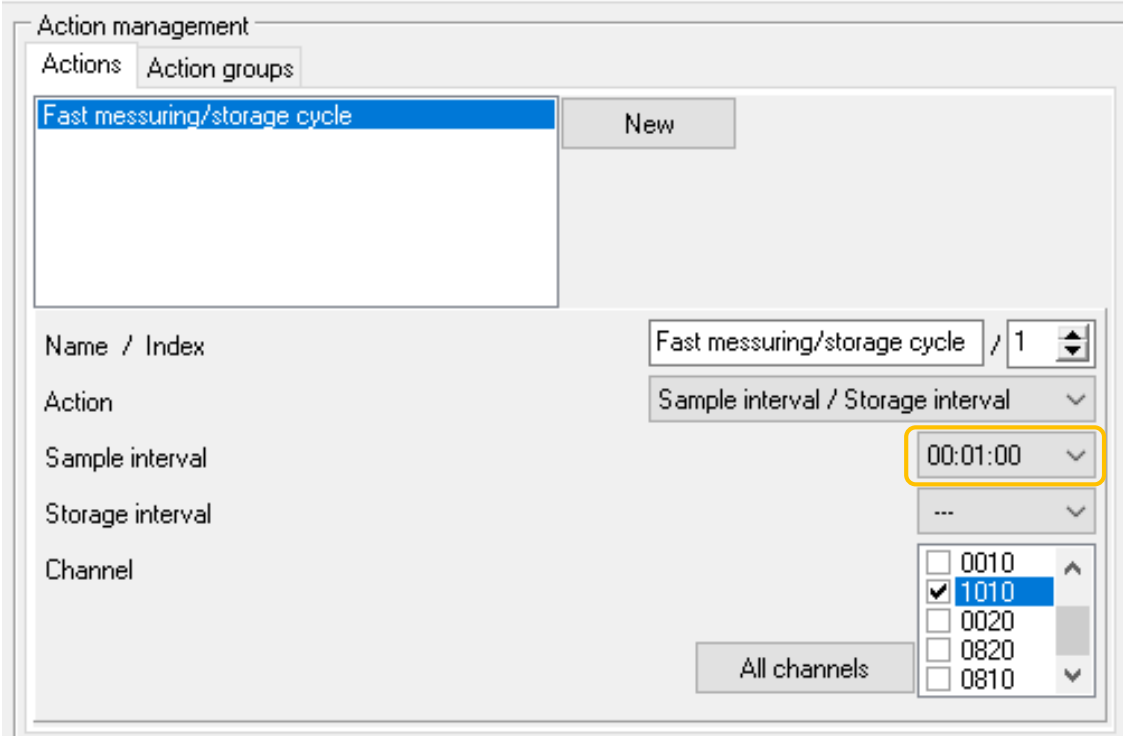


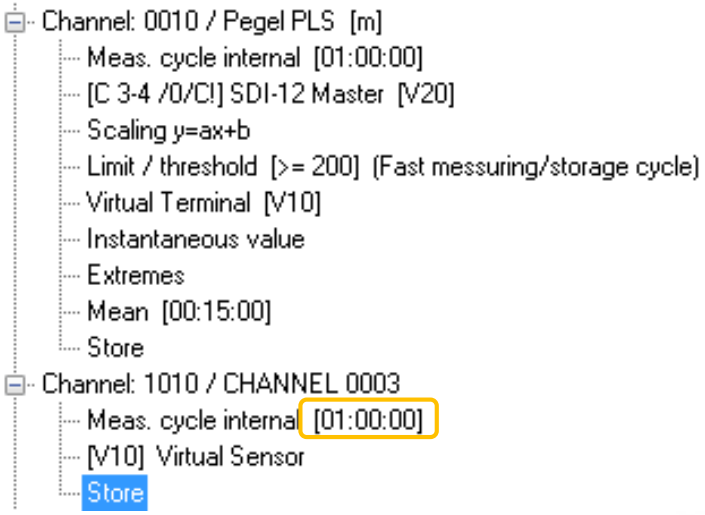




5. „BURST MODUS“ / MEASURING & STORAGE INTERVAL

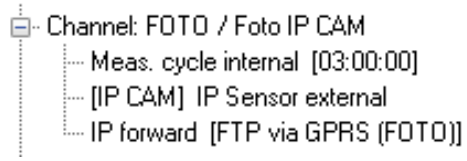
- The measuring interval (as well as the storage interval for sum and extreme value, not for the mean module!) can also be influenced for a channel if a threshold value is exceeded.
- In the shown example, normally only individual values of the pressure probe are stored on the hour. When the threshold value is exceeded, each value (measuring cycle of 1 min) is stored.

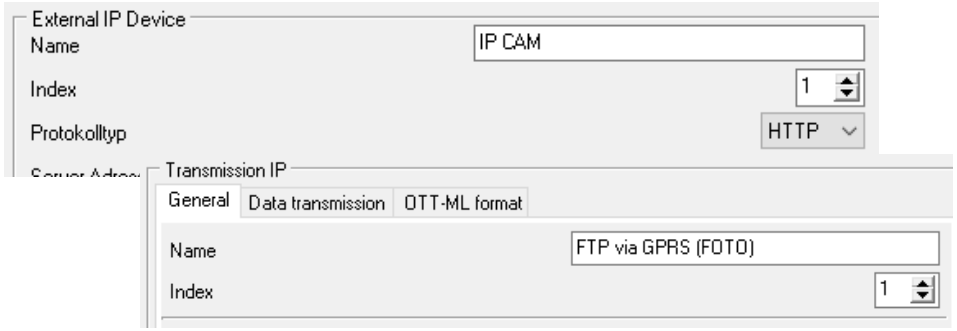


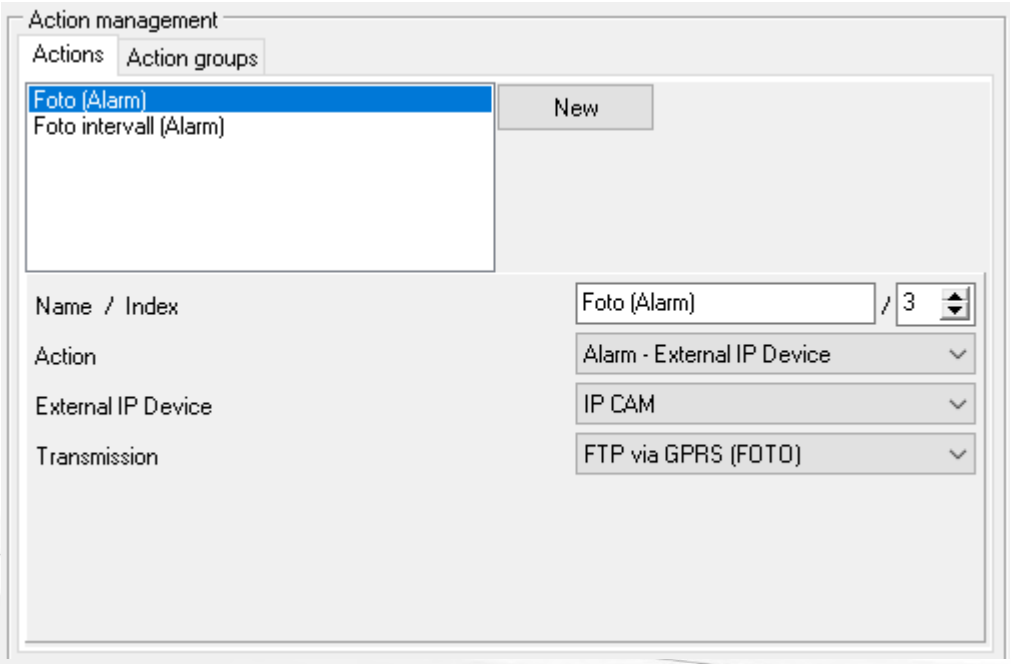


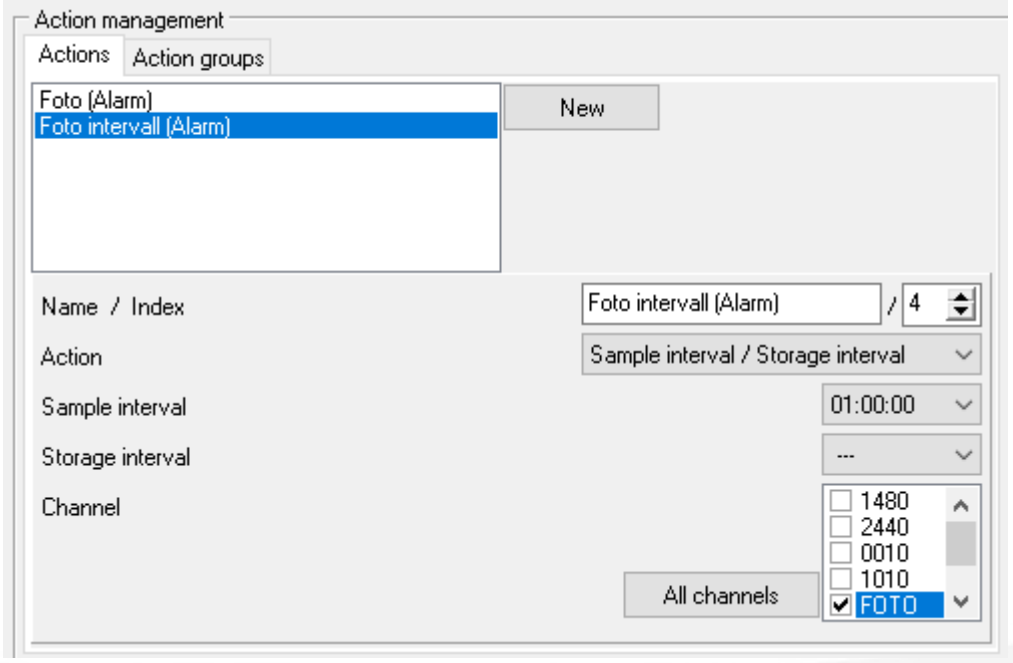
6. TAKE PICTURE AND SEND IN CASE OF ALERT

- Analogous to the previous "Burst Mode", you can also influence how often photos are taken:
  - Recording at a specific event
  - Changing the recording intervals
- Single recording and interval must not be included in a group (actual firmware V3.03.1).









We wish you success with the implementation!

Yours

OTT HydroService

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