

## TECH NOTE :: QuantumX / catmanAP and Multi IO Module

Version: 2015-01-30

Author: Christof Salcher, Product Manager Test & Measurement, HBM Germany


Status: public

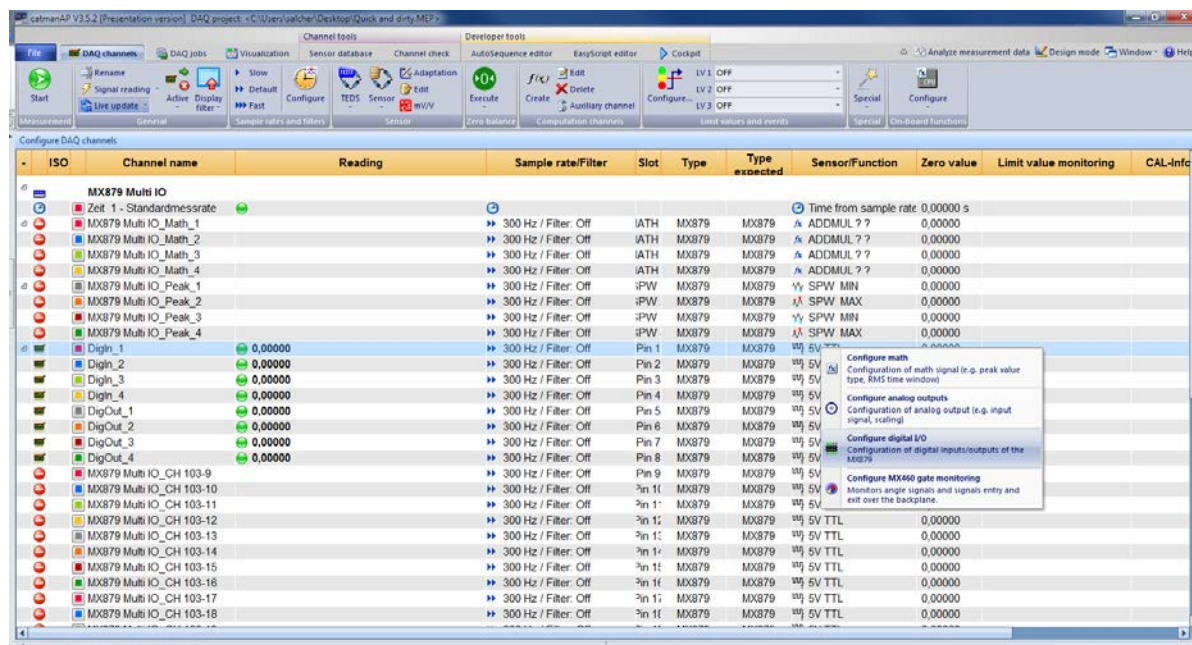
### Abstract

This Tech Note describes how to parameterize QuantumX digital inputs and outputs of MX879 in catmanAP.

### Initialization

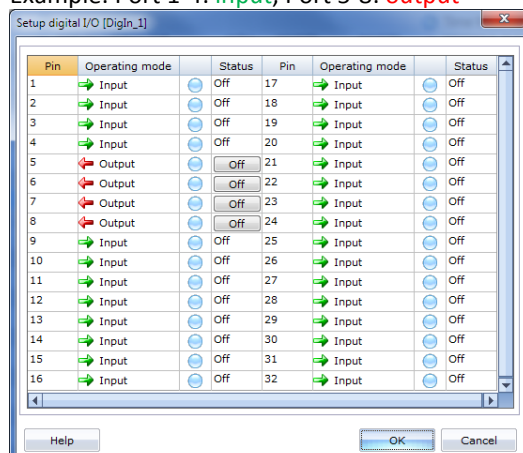
#### Basic initialization

- Activate the digital IO you want to use (left column) by a mouse click on 
- Name inputs and outputs according to your needs
  - Our Example: DigIn\_1 (physical port 1), DigOut\_1 (physical port 5)
- Right mouse click on “sensor / function” and parameterize digital IO



Parameterize digital ports as input or output

Example: Port 1-4: **input**, Port 5-8: **output**



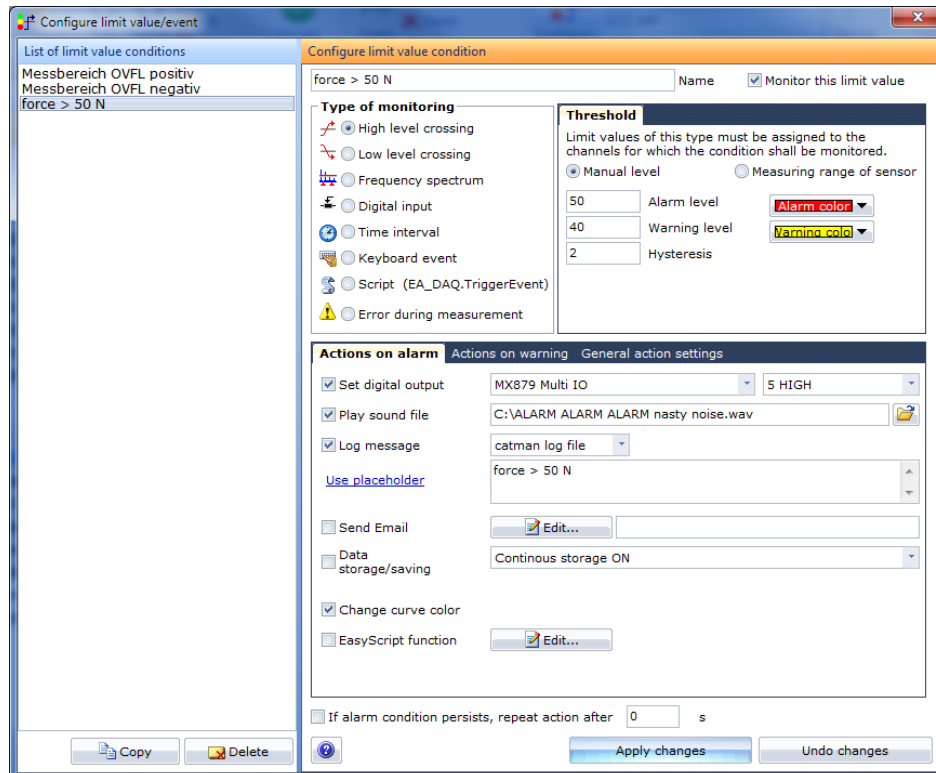
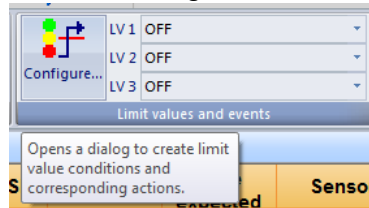
You can test the output ports by using the push buttons.

## Setting Alarms

### Create an ALARM when load is too high

Example: force > 50 N will set port 5 to HIGH, change curve colour and so forth.

Create and configure a limit switch:



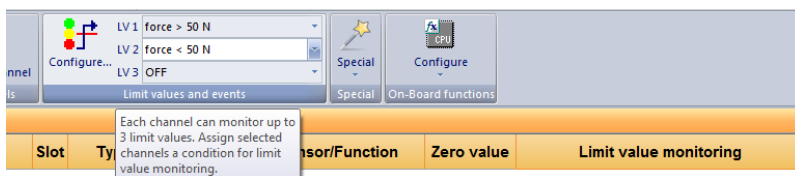
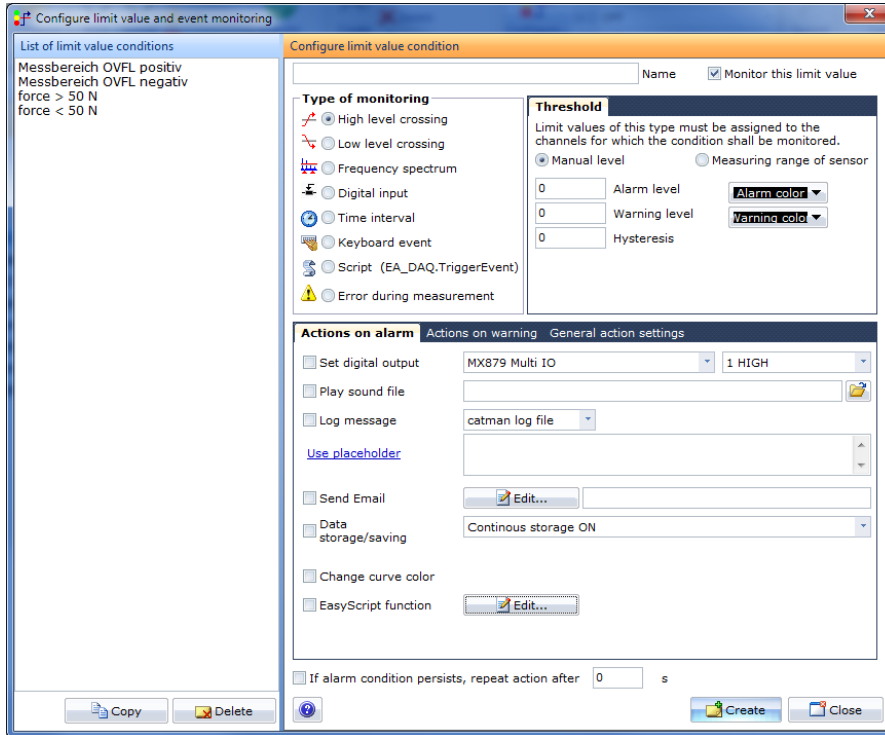
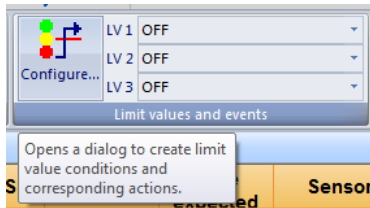
Now go to force channel and right mouse click in column "limit value monitoring":

ISO	Channel name	Reading	Sample rate/Filter	Slot	Type	Type expected	Sensor/Function	Zero value	Limit value monitoring
	<b>MX879 Multi IO</b>								
	<b>MX840A TM</b>								
	Zeit 2 - Standardmessrate						Time from sample rate: 0,00000 s		
	force 200 N	3,681 N	300 Hz / BE 20 Hz (Auto)	1	MX840A	MX840A	U9B (SG full bridge)	0,00000 N	
	WI +/-5mm	-3,371 mm	300 Hz / BE 20 Hz (Auto)	2	MX840A	MX840A	WI (Inductive half bridge)	0,00000 mm	
	MX840A TM_CH 3	0,00013 V	300 Hz / BE 20 Hz (Auto)	3	MX840A	MX840A	DC Voltage	0,00000 V	
	MX840A TM_CH 4	No signal	300 Hz / BE 20 Hz (Auto)	4	MX840A	MX840A	DC Voltage	0,00000 V	
	MX840A TM_CH 5	No signal	300 Hz / BE 20 Hz (Auto)	5	MX840A	MX840A	DC Voltage	0,00000 V	
	MX840A TM_CH 6	No signal	300 Hz / BE 20 Hz (Auto)	6	MX840A	MX840A	DC Voltage	0,00000 V	
	MX840A TM_CH 7	No signal	300 Hz / BE 20 Hz (Auto)	7	MX840A	MX840A	DC Voltage	0,00000 V	
	MX840A TM_CH 8	No signal	300 Hz / BE 20 Hz (Auto)	8	MX840A	MX840A	DC Voltage	0,00000 V	

Now select the newly created limit value:

MX840A	U9B (SG full bridge)	0,00000 N	LV1: force > 50 N
MX840A	WI (Inductive half bridge)	0,00000 mm	
MX840A	DC Voltage	0,00000 V	

In case this ALARM shall disappear again after a certain level is reached create a second limit value on the same channel



Time from sample rate 0,00000 s				
1	MX840A	MX840A	U9B (SG full bridge)	0,00000 N LV1: force > 50 N LV2: force < 50 N
2	MX840A	MX840A	WI (Inductive half bridge)	0,00000 mm
3	MX840A	MX840A	DC Voltage	0,00000 V
4	MX840A	MX840A	DC Voltage	0,00000 V
5	MX840A	MX840A	DC Voltage	0,00000 V
6	MX840A	MX840A	DC Voltage	0,00000 V
7	MX840A	MX840A	DC Voltage	0,00000 V
8	MX840A	MX840A	DC Voltage	0,00000 V

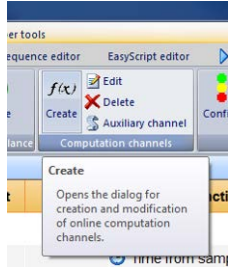
### Create an ALARM on a logical combination of digital inputs

Create the following logical combination in catman:

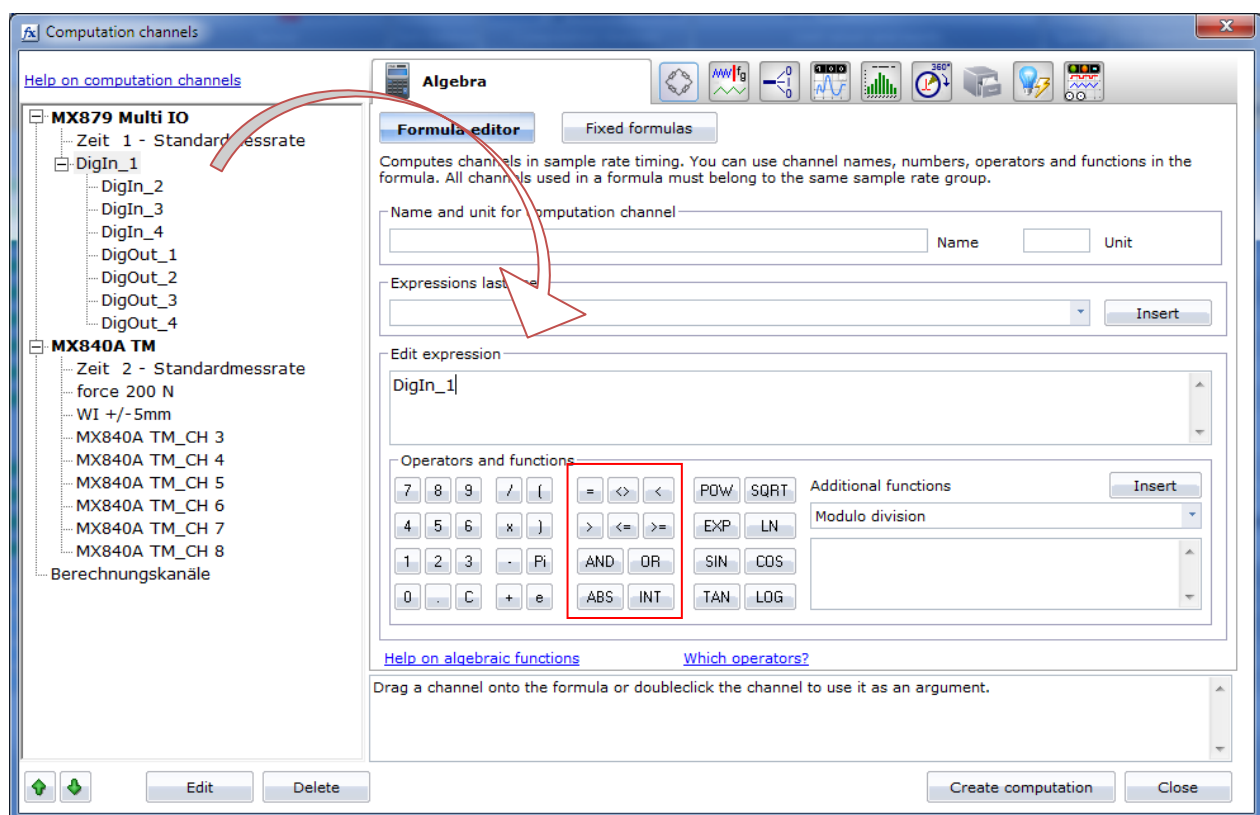
“DigIn\_1” AND “DigIn\_2” AND “DigIn\_3” = ALARM Machine Status

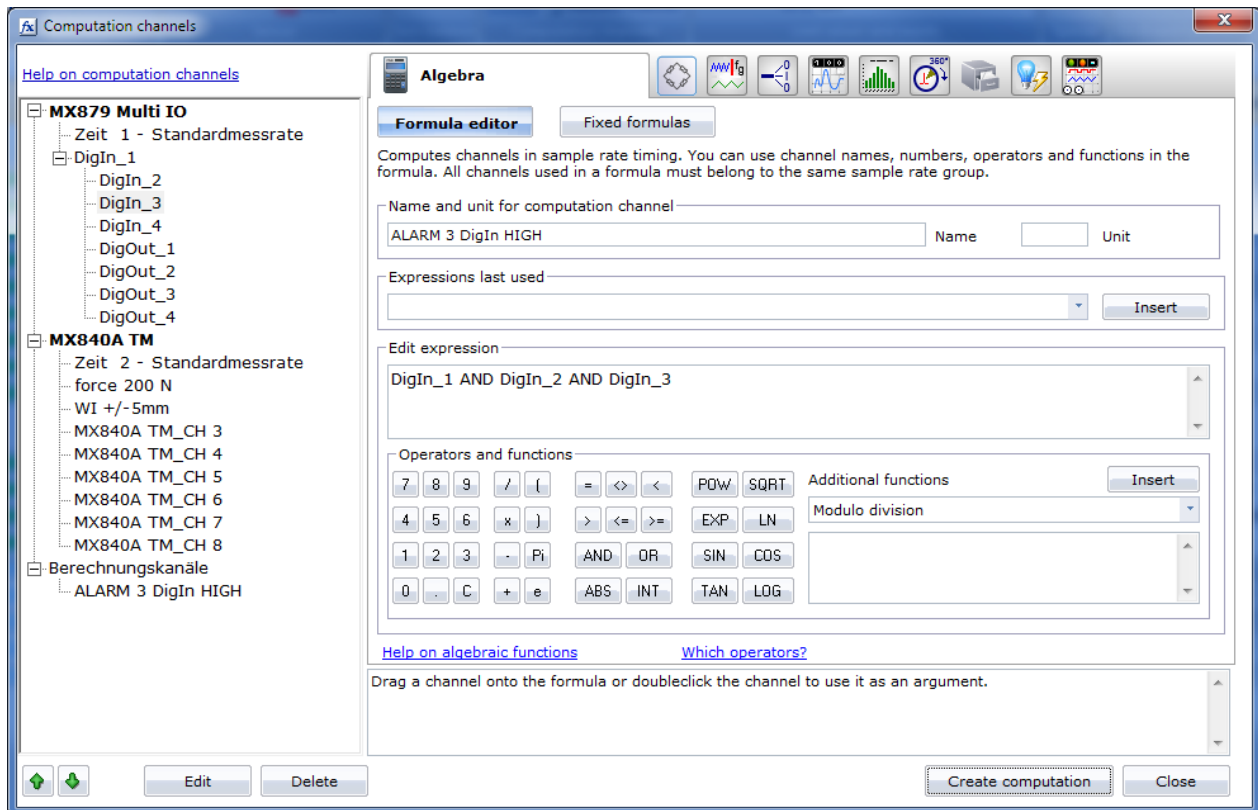
ALARM activates “DigOut\_1”

Use catmans powerfull online math functionality an create a virtual channel:

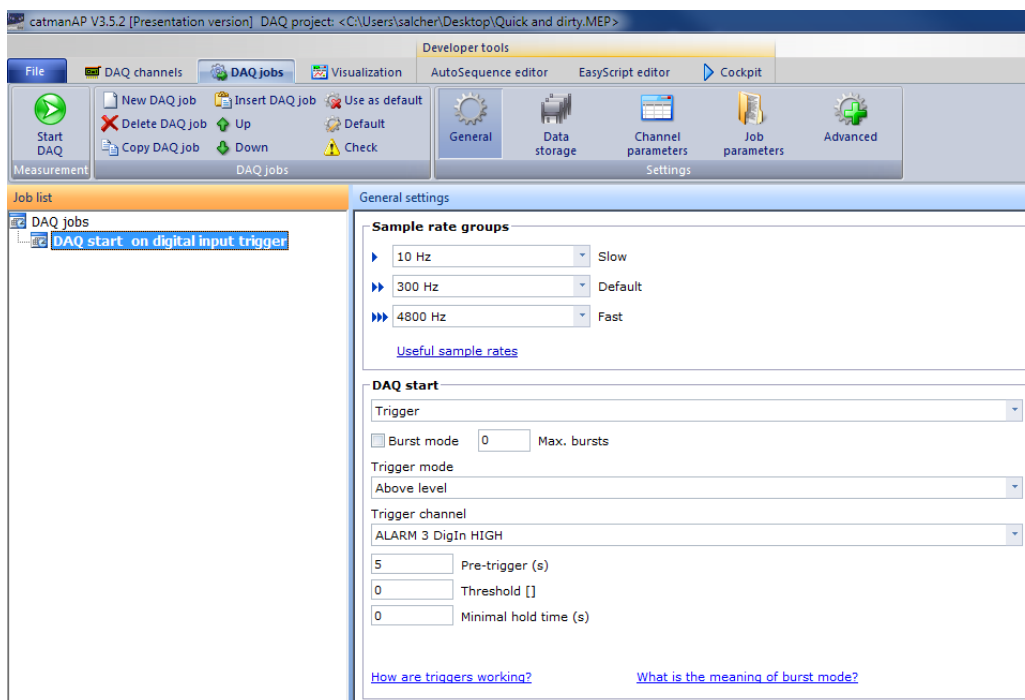


Drag and drop Inputs to math expression field and “create computation” as new signal which is calculated online:





If “ALARM 3 DigIn HIGH” is active the DAQ job could start for example.



Or this ALARM can be monitored again by a certain limit value.

**Legal Disclaimer:** TECH NOTEs are designed to provide a quick overview. TECH NOTEs are continuously improved and so change frequently. HBM assumes no liability for the correctness and/or completeness of the descriptions. We reserve the right to make changes to the features and/or the descriptions at any time without prior notice.