# Alarm Calculation scheme (CAEN)

**Enable**

Keeps the enabling status
*0 = Disabled*
*1 = Enabled*

**Status**

Keeps the hardware status
*Off(0) On(1)*
*Rup(2) Rdn(3) ...*

**Set Voltage**

Outputs the value into hardware

*Float number*

**Set Voltage Feedback**

Feedback of set Voltage (hardware)
*Float number*

**Monitored Voltage**

Actual Voltage on hardware

*Float number*

**Current Alarm condition**

INPUTS
Enable  Status  Delta  Epsilon
CALCULATE
**IF** Enable=Disabled:
   Status=Off **OR** Status=Ramping Down
**IF** Enable=Enabled:
   (Status=Ramping Up **AND** Epsilon) **OR**
   (Status=On **AND** Delta **AND** Epsilon)

RESULT
*True = NO_ALARM (0)*
*False = Alarmed (1)*

**Epsilon**

INPUTS
Feedback of set Voltage
Set Voltage
Level = 0.01

CALCULATE
| Vfdk − Vset | < lvl

RESULT
*True = 1*
*False = 0*

**Delta**

INPUTS
Feedback of set Voltage
Monitored Voltage
Level = 0.5

CALCULATE
| Vfdk − Vmon | < lvl

RESULT
*True = 1*
*False = 0*

**Delayed Alarm condition**

INPUTS
Alarm condition
Delay = 2 seconds

CALCULATE
Copy of input with delay

RESULT

*True = NO_ALARM (0)*
*False = Alarmed (1)*

**Compare Alarms**

INPUTS
Current Alarm condition
Delayed Alarm condition

CALCULATE
**IF** delayed_alarm=Alarmed
**AND** current_alarm=Alarmed

RESULT
*True = Alarmed (1)*
*False = NO_ALARM (0)*

**Alarm**

Keeps the alarm status

*1 = Alarmed*
*0 = NO_ALARM*