HMI Symbols

Quick Reference

Content

1 General

This manual attempts to explain the basic operation of the "BatchXpert" process management system and the "BatchXpert Compact" system. The BatchXpert system is a process management system that incorporates standardized modules to form process images. These modules always incorporate certain functions that are available to the user and standardized symbolic ones for the operator.

2 General
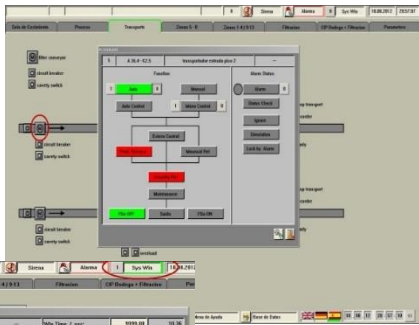
Each type of control module has two windows with details regarding this module. One window with general details and one with advanced details. To open the detail window, simply right-click on the module you want to view. A window opens with details about the selected module.

At the top of the menu bar, there is a "Detail" option that allows you to open the advanced detail sales of these modules. When the "Detail" mode is enabled (Green), and a right-click is made, the Advanced Details window opens instead of the sale with the general details.

The advanced details window is intended for system administrators and maintenance teams. To open this window you will need power user rights, and usually operators do not own this right.
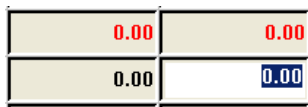
The Advanced Details window generally allows you to adjust settings, limits, and special functions, depending on the type of module.

The following chapter describes the modules, their detail windows, and the functions they have.

2.1 Enter Nominal Values

Each numeric value that can be adjusted by the operator is entered through numeric input boxes . Generally nominal values (values that can be adjusted) are represented by a white or very bright background color. The current values (the ones that can't be adjusted, that represent some system value) are instead represented with darker background colors, so that the nominal values of the current values are more easily targeted.

If a face value is tampered with, its value changes to red, indicating that it is tampered with. At this moment the stock is NOT active yet! With the "Enter" key, all the values that are manipulated (the red ones) are sent to the PLC and thus activate them. The "ESC" key aborts this action and all

nominal values return to the value they had before the manipulation. You can manipulate several nominal values and activate them at the same time with the "Enter" key.

In this image you can see two values (the red ones) that are manipulated to zero, a value that is being edited (the one marked with blue) and a value that is still not being manipulated (the black one).

3 Actuators

Actuators represent objects in the field that can be manipulated from the system. In general, Motors, Valves and Lamps are represented as Actuators. All Actuators have a common symbol, and they differ only in the symbol of the actuator (the colors remain the same).

3.1 Border Color

Status OK: The module does not have any alarms, warnings or similar. It is in its normal status

Active Alarm: When the module has a fault (in the case of Actuators, a lack of confirmation of start or position). Alarm Still Present and Cannot Be Confirmed

Unconfirmed Alarm: Indicates that the module has had a recent failure, which is still pending confirmation. The alarm is no longer active, however, it needs to be confirmed.

Warning: The module has some kind of malfunction that is not yet considered a Failure.

Ignore Alarm: The module no longer generates Alarms and ignores all new fault triggers. However, in this mode it does NOT simulate position or gait signals. For simulation, the "Simulation" mode must be activated.

3.2 Background Color

Maintenance: The module has been locked by maintenance personnel and cannot be activated in either automatic or manual mode.

Manual Release: Process lock has been temporarily disabled. Module process locks are disabled. However, security locks are still active.
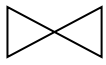
Automatic: The module is in automatic mode and is being controlled by the system
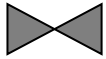
Manual: The module is in manual mode and can be operated only by the operator.
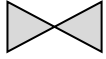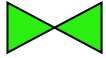
3.3   Symbol Background Color

Maintenance: The module has been locked by maintenance personnel and cannot be activated in either automatic or manual mode.

Locked: The module is locked by a process lock or a security lock. The module cannot be activated in either manual or automatic mode.
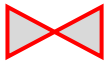
Off/Off: The module is not stopped/closed.

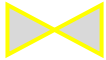Power On/On: The module is not Running/Open.

3.4   Symbol Border Color

Status OK: The module does not have any alarms, warnings or similar. It is in its normal status

Status Not in order: The module is in motion and has not yet reached its final position.

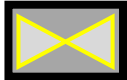Simulation: The mode is simulated. Internally, it always assumes that the final position and/or feedback of the module are correct, regardless of ground signals.
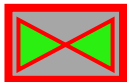
3.5   Examples

Actuator in Automatic, unlocked, Closed, without alarm or simulation. Normal Status

Actuator Simulated, in automatic and normal status

Actuator failing, trying to open, but not getting to its position Open

Actuator in Maintenance

4 Digital Input

Digital Inputs: represent digital signals from the terrain. They are generally used for level signals, vacuum signals, but also for keypads. Each signal can have an alarm status, where the module alarm is triggered

4.1 Border Color

Status OK: The module does not have any alarms, warnings or similar. It is in its normal status

Active Alarm: When the module has a fault (in the case of digital inputs, the signal is in the Fault status). Alarm Still Present and Cannot Be Confirmed

Unconfirmed Alarm: Indicates that the module has had a recent failure, which is still pending confirmation. The alarm is no longer active, however, it needs to be confirmed.

Warning: The module has some kind of malfunction that is not yet considered a Failure.

Ignore Alarm: The module no longer generates Alarms and ignores all new fault triggers. However, in this mode it does NOT simulate signals. For simulation, the "Simulation" mode must be activated.

4.2 Symbol Background Color

Off/Off: The module's signal is active.

Power On/On: The module's signal is disabled.

4.3 Symbol Border Color

Status OK: The module does not have any alarms, warnings or similar. It is in its normal status

Simulation: The mode is simulated. The current signal of the module can be changed by the operator

5 Analog Input

Analog inputs represent analog measurements in the field, which deliver instantaneous measurement values. Each module may have set Alarm or Warning levels, which trigger the module's alarm/warning when these limits are exceeded.

5.1 Border Color

Status OK: The module does not have any alarms, warnings or similar. It is in its normal status

Active Alarm: When the module has a fault (in the case of Actuators, a lack of confirmation of start or position). Alarm Still Present and Cannot Be Confirmed

Unconfirmed Alarm: Indicates that the module has had a recent failure, which is still pending confirmation. The alarm is no longer active, however, it needs to be confirmed.

Warning: The module has some kind of malfunction that is not yet considered a Failure.

Ignore Alarm: The module no longer generates Alarms and ignores all new fault triggers. However, in this mode it does NOT simulate position or gait signals. For simulation, the "Simulation" mode must be activated.

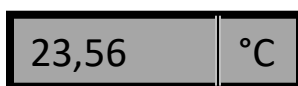## 5.2 Background Color

Normal: The module is in normal mode

Manual Entry: The module functions as input of operator values. That is, the operator can enter a process value measured with laboratory equipment.

Simulation: The mode is simulated. The current signal of the module can be changed by the operator
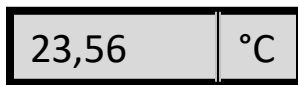
5.3 Examples

| 23,56 | °C |

Normal input, no alarm

| 23,56 | °C |

Input failed, high or low limit has been exceeded

| 23,56 | °C |

Module in simulation

| 23,56 | °C |

Modulo works as manual entry, where the operator must enter a value manually

6 Counters (Totalizers)

Counters represent totalizers that account for the number of pulses delivered by a flowmeter in the field. These modules deliver in aggregated volume of the instantaneous meters

6.1 Border Color

Status OK: The module does not have any alarms, warnings or similar. It is in its normal status

Active Alarm: When the module has a fault (in the case of Actuators, a lack of confirmation of start or position). Alarm Still Present and Cannot Be Confirmed

Unconfirmed Alarm: Indicates that the module has had a recent failure, which is still pending confirmation. The alarm is no longer active, however, it needs to be confirmed.

Warning: The module has some kind of malfunction that is not yet considered a Failure.

Ignore Alarm: The module no longer generates Alarms and ignores all new fault triggers. However, in this mode it does NOT simulate position or gait signals. For simulation, the "Simulation" mode must be activated.
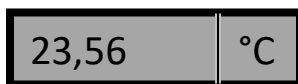
6.2 Background Color

Normal: The module is in normal mode

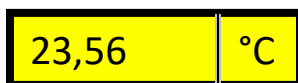Simulation: The mode is simulated. The current signal of the module can be changed by the operator

6.3 Examples

23,56	°C

Normal input, no alarm

23,56	°C

Input failed, high or low limit has been exceeded

23,56	°C

Module in simulation

7 PID (Analog Output) Controllers

Regulators represent equipment that controls Manipulator Valves or Pumps with Frequency Harvester, to adjust a parameter such as Flow or Temperature in the process. Alarms are triggered when the controller is unable to adjust the process value within the normal control time.

7.1   Border Color

Status OK: The module does not have any alarms, warnings or similar. It is in its normal status

Active Alarm: When the module has a fault (in the case of Actuators, a lack of confirmation of start or position). Alarm Still Present and Cannot Be Confirmed

Unconfirmed Alarm: Indicates that the module has had a recent failure, which is still pending confirmation. The alarm is no longer active, however, it needs to be confirmed.

Warning: The module has some kind of malfunction that is not yet considered a Failure.

Ignore Alarm: The module no longer generates Alarms and ignores all new fault triggers. However, in this mode it does NOT simulate position or gait signals. For simulation, the "Simulation" mode must be activated.
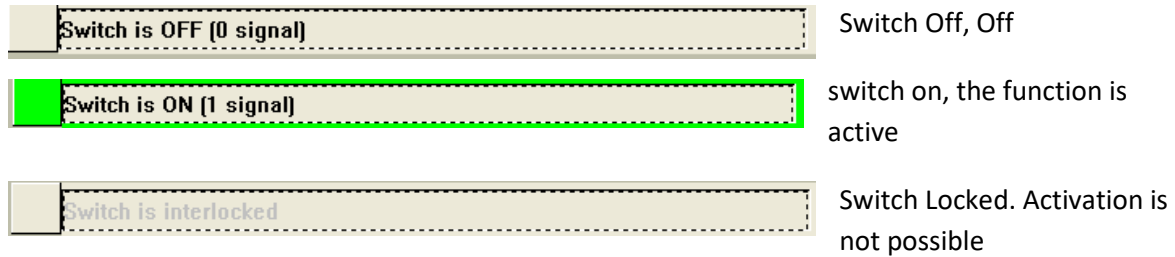
7.2   Background Color

Normal: The module is in normal mode

Internal Setpoint: The module uses the Nominal Value adjusted in the same module by the operator, instead of the nominal value of the recipe.

Manual: The slider does not manipulate the output value, but the output of the slider is fixed to a value set by the operator.

Simulation: The mode is simulated. The current signal of the module can be changed by the operator

7.3   Examples

55.00	°C
35,00	%

Normal regulator, activated with a nominal value of 55°C and a valve opening of 35%

8 Messages

Messages represent situations in the process that require the attention of operators. There are Operational Messages, which indicate some manual operation to be performed, and Failure Messages, which indicate some non-normal condition of the process.

8.1 Border Color

Status OK: The module does not have any alarms, warnings or similar. It is in its normal status

Alarm Message: When the module has a fault (in the case of Actuators, a lack of confirmation of power or position). Alarm Still Present and Cannot Be Confirmed

Operational Message: That the process requires some manual operation on the part of the operators

Ignore Alarm: The module no longer generates Alarms and ignores all new fault triggers. However, in this mode it does NOT simulate position or gait signals. For simulation, the "Simulation" mode must be activated.

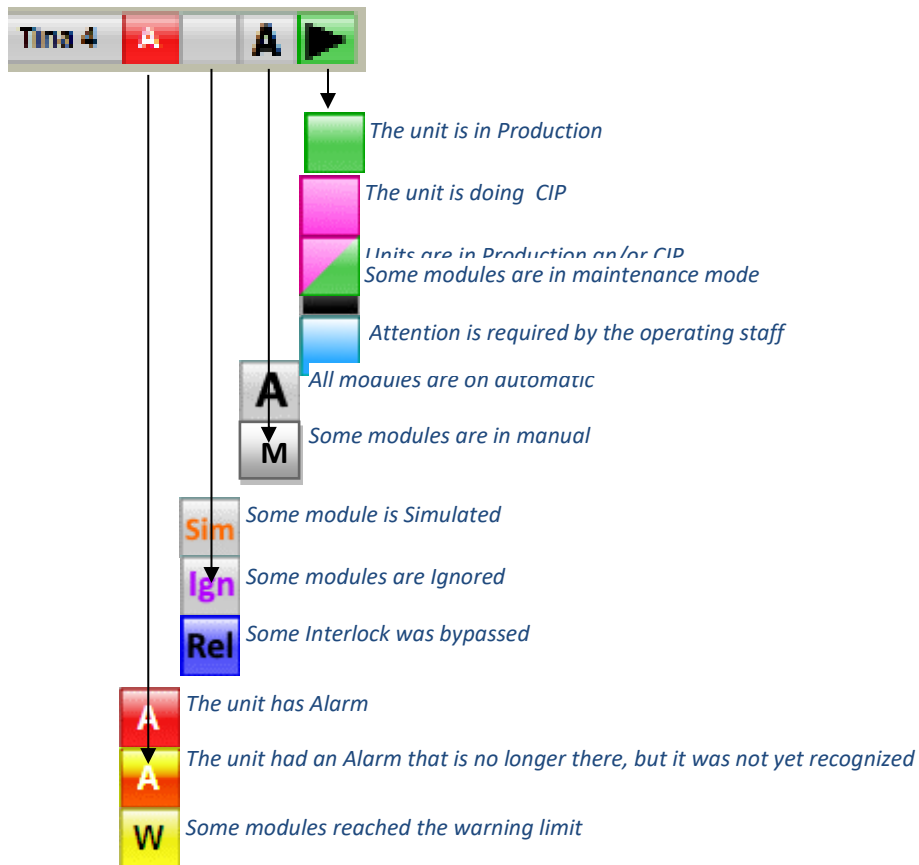## 8.2 Background Color

Normal: The module is in normal mode

Simulation: The mode is simulated.

9 Switches

Switch is OFF (0 signal)	Switch Off, Off
Switch is ON (1 signal)	switch on, the function is active
Switch is interlocked	Switch Locked. Activation is not possible

10 Alarm Group

Tina 4

The unit is in Production

The unit is doing CIP

Units are in Production an/or CIP
Some modules are in maintenance mode

Attention is required by the operating staff

All modules are on automatic

Some modules are in manual

Some module is Simulated

Some modules are Ignored

Some Interlock was bypassed

The unit has Alarm

The unit had an Alarm that is no longer there, but it was not yet recognized

Some modules reached the warning limit

11Unit

Run Mode: Click to put Unit in Run

Pause Mode: Click to put Unit on Pause

Hold Mode: Click to put unit on hold

Step -1: Click to move backwards one step

Step +1: Click to move forward one step

Unit Name: Click to open step list

Program Name: Click to start a program

Click to view process parameters

Click to view Additional Unit Information

Alarm Indicator: Click to confirm alarms

Operator Request

| ▶ | ❚❚ | ■ | ◀◀ | ▶▶ | [No] unit name | program number + text / charge number | actual step no / phase number + text | 🔍 | ⓘ | ⊗ |
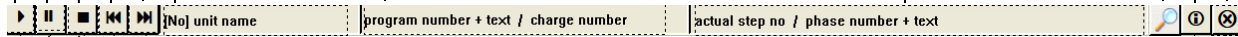
Unidad on Hold

Unidad on Pausa

Unidad in Run

⊗ No alarm
⊗ User Message
⊗ Active Alarm

ⓘ Active Production
ⓘ Active CIP
ⓘ Sterile Unit
ⓘ Clean Unit
ⓘ Unit with Expired CIP
ⓘ Uncleaned Unit
ⓘ Unit Requests CIP