



Visionic 5 Customizing driver properties

Introduction

The goal of this tutorial is to guide you through process of customizing driver properties. You will learn how to set general driver properties, different models of devices supported, configure datapoints and alarms.

For this exercise you will not need any software installed on your computer. You need only account name for Visionic5.com web site.

Editing device drivers

We will assume that you already know how to create new Visionic5 project and import a driver (if not, have a look at our previous tutorials). When you create new project, import “Miteq 94xx converter” driver and click on “Edit”, like it is presented in this picture:

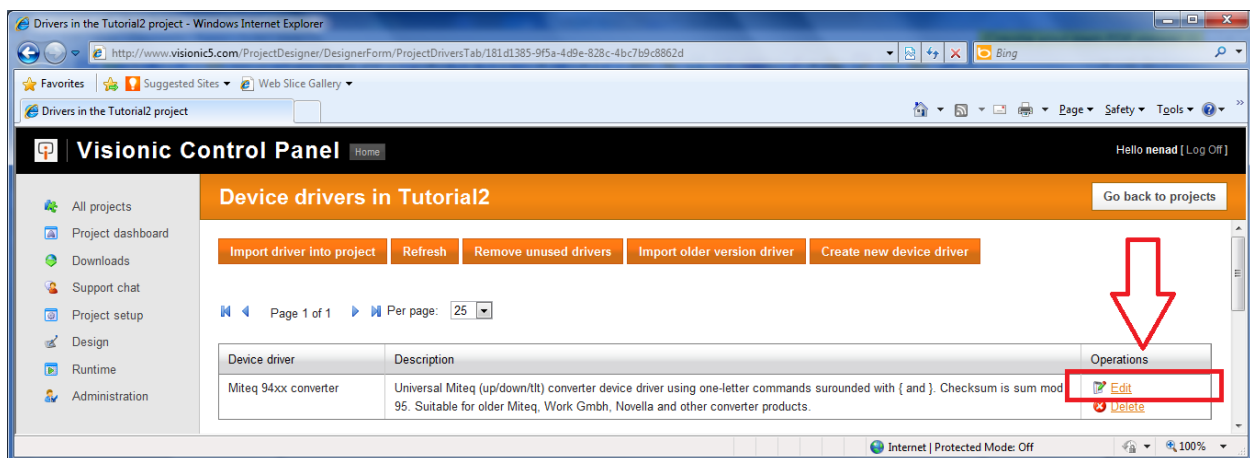


Figure 1: Edit driver properties

It is good to know that when we import a driver, a default driver settings are copied from Visionic5 database, but these settings can be changed and customized.

After clicking on “Edit”, you will see a driver editing screen with several tabs. We will focus on the “General” tab first and explain what each property represents: (see Figure 2)

- “**Device driver name**” is a unique name for the driver and we will not change this
- “**Description**” is a user defined description of a driver, we can change this as we want, just make sure that this is not empty
- “**Protocol version**” is currently not defined
- “**Official version**” is currently not defined
- “**Server driver**” is the Visionic internal driver name and should not be changed
- “**Is active**” checkbox is currently not defined. It is safe to check this for every driver

- “Flags” is currently not defined. It is safe to put 6 here
- “HAM flags” describe how device can be connected and is calculated according to this table:

32	16	8	4	2	1
HTTP	SNMP	MODBUS	UDP	TCP/IP	SERIAL

So, number 7 will represent that UDP, TCP/IP and SERIAL connections are available.

- “Max devices per instance” tells how many devices the compiler can put in one instance (thread). Put -1 for unlimited, but for now safe value is 0 or 1 which means that one device is in one thread
- “Driver price / device / month” represents a price for the driver, per month

The screenshot shows the 'Visionic Control Panel' interface. The title bar reads 'Visionic Control Panel' and 'Hello nenad [Log Off]'. The main heading is 'Properties of device driver Miteq 94xx converter'. Below this is an 'Update driver' button. The 'General' tab is selected, showing the following fields:

- Device driver name: Miteq 94xx converter
- Description: Universal Miteq (up/down/tilt) converter device driver using one-letter commands surrounded with { and }. Checksum is sum mod 95. Suitable for older Miteq, Work GmbH, Novella and other converter products.
- Protocol version: MITEQ ASCII protocol
- Official version: MITEQ ASCII protocol
- Server driver: PROTODevDriver.MITEQ9600
- Flags: 6
- HAM flags: 7
- Max devices per instance: 0
- Driver price / device / month: 30.00
- Is active?:

Figure 2: General tab

Now, let’s have a look at “Models” tab. If a same driver is used for different devices (or same devices from different manufactures), here we can fill the data regarding this. We have already filled this data and by clicking on “Edit” (see Figure 3) we will see the entered data.

VISIONIC Control Panel Home Hello Administrator [Log Off]













Go back to drivers

Update driver

General Models Datapoints Alarms Files Deprecated properties

Create New

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Operations	Manufacturer	Device class	Model name	Description	Web site
 	Miteq	Up/Down Converters	94xx series	Any model from up / down / TLT converters from 94xx series	http://www.miteq.com/satcomeq/pdfs/d-148f.pdf
 	Miteq	Up/Down Converters	96xx series	Any up / down / tl converter from 96xx series	http://www.miteq.com/satcomeq/pdfs/d-148f.pdf
 	Miteq	Up/Down Converters	97xx series	Any model from up / down / TLT converters from 97xx series	http://www.miteq.com/satcomeq/pdfs/d-243c.pdf
 	Miteq	Up/Down Converters	99xx series	Any model from up / down / TLT converters from 99xx series. Can be used via serial port or IP port 23 (defined as the same protocol as serial)	http://www.miteq.com/satcomeq/pdfs/d326b_web.pdf
 	Novella	Up/Down Converters	UCS / DCS converters	Novella converters are generally compatible with MITEQ series	http://www.novella.co.uk/
 	WORK	Up/Down Converters	UCS / DCS converters	WORK converters support Miteq protocol (MTQ protocol in the device menu)	http://www.work-gmbh.de/

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Figure 3: Models tab

On the next displayed screen (see Figure 4), we can see manufacturer, device class/type, model name, description, web site for docs and even an image of the actual device. This properties are are pretty self-explanatory, so we will not discuss them further.

Edit device model Go back to device driver

Update model

Manufacturer:
 Miteq


Device class / type:
 Up/Down Converters

Model name:
 94xx series

Description:
 Any model from up / down / TLT converters from 94xx series

Web site:
<http://www.miteq.com/satcomeq/pdfs/d-148f.pdf>

Image:



Upload image:
 No file selected Choose File

Figure 4: Edit device model

Next tab, called “Datapoints” is the most important tab (together with “Alarms” tab) as this is the place all parameters and statuses are defined. This is how it looks:

The screenshot shows the 'Datapoints' tab of a software interface. At the top, there is a navigation bar with tabs for 'General', 'Models', 'Datapoints', 'Alarms', 'Files', and 'Deprecated properties'. Below this, there are buttons for 'Create New' and 'Preview device frontpanel'. The main area contains a table with the following data:

Operations	Name	Type	Design input req	Screen sort	Alternative name
Edit Delete	Address	Parameter	True	10	Address
Edit Delete	Attn	Parameter	False	1000	Attn
Edit Delete	ConvType	Parameter	True	20	ConvType
Edit Delete	Freq	Parameter	False	800	Frequency
Edit Delete	Local	Status	False	1000	Local
Edit Delete	Maintenance	Status	False	1000	Maintenance
Edit Delete	Muted	Status	False	1000	Muted
Edit Delete	ActiveLevel	DesignProperty	True	1000	ActiveLevel
Edit Delete	SummaryAlarm	DesignProperty	True	100	SummaryAlarm
Edit Delete	VisibleOnScreen	DisplayProperty	False	1000	VisibleOnScreen

Figure 5: Datapoints tab

The main table lists all devices parameters and statuses. Also, here we can set design properties, but this will be covered in some other tutorial. The displayed columns represent only some of the properties that we can set when we click on “Edit” link to the left of each parameter. So, let’s edit, for example, “Freq” parameter. We are presented with a screen like this:

Edit device 'Miteq 94xx converter' datapoint
Go back to driver overview

Datapoint name <input type="text" value="Freq"/>	Datapoint type <input type="text" value="Parameter"/>	Data type <input type="text" value="visSingle"/>
Description <div style="border: 1px solid #ccc; padding: 5px; min-height: 60px;">Frequency of the converter</div>		
Alternate name <input type="text" value="Frequency"/>	Units <input type="text" value="MHz"/>	Formula <input type="text"/>

Presentation properties

<input type="checkbox"/> Required in design	<input checked="" type="checkbox"/> Presented on screen	Sort order <input type="text" value="800"/>
---	---	--

Format <input type="text" value="0.000"/>	Show in device dialog as <input type="text" value="Number text box"/>	Default value <input type="text"/>
--	--	---------------------------------------

Setting datapoint

Set function <input type="text" value="SetFreq"/>	Param index <input type="text" value="1"/>	Param count <input type="text" value="2"/>
--	---	---

Figure 6: Edit Freq parameter

Now, let's explain what each property represents:

- **“Datapoint name”** is the datapoint name hard coded in the driver and should not be changed
- **“Datapoint type”** tells if the datapoint is a parameter or a status (also, shouldn't be changed)
- **“Data type”** is the driver internal data type, don't change this also
- **“Description”** can be changed as we want
- **“Alternate name”** is the parameter name that can be displayed on device front panel. It is useful to set this if we are not pleased with parameter/status name, so if, for example, we have hard coded “Freq” parameter name in driver, we can give it alternative name “Frequency” that is more descriptive
- **“Units”** is the unit suffix that is displayed after the parameter value
- **“Formula”** is where we can do further calculations for the parameter value. You can use following code when editing this field:
 - **VisApp.Param**("Parameter name") returns parameter value as string
 - **VisApp.Status**("Status name") returns status value as string
 - **VisApp.Alarm**("Alarm name") returns alarm value as string
 - **CStr, CBool, CDb1, CInt** will cast to sting, boolean, double and integer types when this is needed (for example for arithmetic operations)

Example:

We can convert frequency from MHz to Hz like this:

```
CDbl(VisApp.Param("Freq"))*1000000
```

- **Choose** can be used to make a condition

Example:

We can display frequency only if not in maintenance, otherwise display message like this:

```
Choose(CInt(VisApp.Status("Maintenance")), VisApp.Param("Freq"),
"Not available - device in maintenance")
```

- **“Required in design”** checkbox should be checked if a parameter must have a default value and if it is not to be changed during runtime. For example, this is true for “Address” and “ConvType” parameters
- **“Presented on screen”** checkbox should be checked if a parameter should be presented on device front panel. This is true for important parameters
- **“Sort order”** is the integer number that determines the order in which the parameters are displayed on device front panel. If the number is lower for one parameter, it means that this parameter is displayed first
- **“Format”** tells in which format the parameter value is displayed on front panel
- **“Show in device dialog as”** tells how the parameter value will be displayed on dialog for the device. Read our previous tutorials to see how the dialogs are made
- **“Default value”** is useful when we are setting the parameters that have “Required in design” checked also, or when we want to set a parameter of DesignProperty type
- **“Set function”** is the internal driver function that is used for setting the parameter and it shouldn’t be changed
- **“Param index”** is used with “Set function” and it shouldn’t be changed
- **“Param count”** is used with “Set function” and it shouldn’t be changed

On “Alarms” tab, we are presented with a screen:

Properties of device driver Miteq 94xx converter Go back to drivers

General | Models | Datapoints | **Alarms** | Files | Deprecated properties

Create New | Set all to Alarm level

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Operations	Alarm name	Level	Alternative name
Edit Delete	IF LO	Alarm	IF LO
Edit Delete	LOA	Alarm	LOA
Edit Delete	LOB	Alarm	LOB
Edit Delete	Power supply	Alarm	Power supply
Edit Delete	RF LO	Alarm	RF LO
Edit Delete	Summary Alarm	Alarm	Summary Alarm
Edit Delete	Synthesizer	Alarm	Synthesizer
Edit Delete	Timeout	Critical	Timeout

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Figure 7: Alarms tab

Here we can see basic information for all alarms. For the exercise, we will disable the “IF LO” alarm, by clicking on “Edit” link to the left of the “IF LO” alarm and selecting “Alarm disabled” in the “Alarm level” combo box, like this:

The screenshot shows a web interface for editing an alarm. At the top, there is an orange header bar with the text "Edit device 'Miteq 94xx converter' alarm" and a "Cancel" button on the right. Below the header, there is a form with two main sections. The first section is labeled "Alarm name" and contains a text input field with the value "IF LO". To the right of this field is an orange "Update alarm" button. The second section is labeled "Alarm level" and contains a dropdown menu. The dropdown menu is open, showing a list of options: "Alarm disabled", "Information", "Warning", "Alarm", "Critical", and "Failed". The "Alarm disabled" option is currently selected and highlighted. To the right of the dropdown menu is a long horizontal input field, which is currently empty.

Figure 8: Changing alarm level

We can also set alarm level to some other value, but in most cases you will use only “Critical” for Timeout alarm and “Alarm” for normal alarms.