





DUNGS MPA 41xx V2.0 Parameterization and Configuration with VisionBox

Andreas Büscher August 14, 2023



Process Heat

Gas Engines

Introduction



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- Product Manager
- State-Certified Technician, specializing in Electrical Engineering
- Master Professional of Business Management (CCI)
- 19 years experiences in electrical engineering and design of natural gas-fired heat treatment and combustion control systems
- 10 years experiences as a product manager for flame safeguards and other electrical controls in the process heat industry
- Delegated committee member in the ISO/TC 244 WG 2 and WG 5 (ISO 13577-2, -4)
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DUNGS MPA 41xx V2.0 Parameterization and Configuration with VisionBox



Agenda

VisionBox Engineering-Tool

Where to get and how to install?

How to create an offline-configuration from the scratch?

How to save and reload a custom offline-configuration?

VisionBox Mini Interface-Adapter for online configuration

How to get connected for online configuration?

Access permissions for online configuration

How to do an online configuration?

How to release an online configuration?

How to adopt a previous V1.x configuration in a V2.0 device?

VisionBox Engineering-Tool



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- Customer benefits
- Where to get and how to install?
- VisionBox Mini Interface-Adapter
- How to use VisionBox Engineering-Tool?
- How to create an offline-configuration from the scratch?
- How to save and reload a custom configuration?
- How to save a configuration how is the documentation done?

VisionBox Engineering-Tool Customer benefits





- Vision Box engineering tool to create and change the configuration/ parameterization of an MPA and VPM
- VisionBox is designed to visualize, archive and document the device parameters
- Offline configuration without hardware linked to the computer
- For service and maintenance purposes
- To gain more detailed information's about the status, the fault conditions and the rout causes
- Valid Version is VisionBox V2.8.2
- Available in 8 different languages
- The usage is free of charge
- VisionBox engineering tool is backward compatible



VisionBox Engineering-Tool Where to get and how to install?

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Abbrechen

Setup-Sprache auswählen

English

Wählen Sie die Sprache aus, die während der

OK

Installation benutzt werden sol



- Go to <u>www.dungs.com</u>
- Select Global Service → Downloads
- Scroll down to Software Tools and download the ZIP-File SetupVisionBox_CompleteInstallation.zip
- Extract the ZIP-File and start installation with doubleclick on SetupVisionBox_V2.8.1_CompleteInstallation.exe

Note: You must have administrator rights for installation

Select an installation language (German or English)

Note:

Once you have started VisionBox you can choose between all languages

VisionBox Engineering-Tool Where to get and how to install?



| | The next dialog | asks for a | password to | o allow the | installation. |
|--|-----------------|------------|-------------|-------------|---------------|
|--|-----------------|------------|-------------|-------------|---------------|

- Enter *dungsCC* to continue the installation
 - Folow the instructions to complete the installation

| Restriction Point V2.8.1 | |
|--|--------|
| Password This installation is password protected. | DUNGS° |
| Please provide the password, then click Next to continue. Passwords are case-sensitive. | |
| Password: | |
| dungsCC | |
| | |
| | |
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| | |
| Next | Cancel |

VisionBox Engineering-Tool How to create an offline-configuration from the scratch?



| File Connection View | Settings MPA / VPM Settings VB Settings GUI shut-down |
|----------------------|---|
| 🍠 🖉 🔍 🔍 | Info Access level |
| | Reset access level |
| | Save configuration |
| | Load configuration |
| | Export configuration as PDF |
| | Send configuration via email |
| | Load delivery configuration |
| | Export error list Export parameter list |
| | Reset operating time Reset startupcounter |
| | Manage snapshotpointer |

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| Device | Order no. | Name | | ^ |
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| MPA4112 | 259066B | MPA4112 V1.1 230V | | |
| MPA4112 | 259070_ | MPA4112 V1.1 115V | | |
| MPA4112 | 259070A | MPA4112 V1.1 115V | | |
| MPA4112 | 259070B | MPA4112 V1.1 115V | | |
| MPA4112 | 294812_ | MPA4112 V2.0 230V | | |
| MPA4112 | 294815_ ^L | ർ MPA4112 V2.0 115V | | |

- An offline configuration is performed when there is no MPA connected to the VisionBox Engineering-Tool
- Open VisionBox and go to Settings MPA / VPM → Load delivery configuration
- Choose the basic version that you like to use
- Finally choose an extension module, if need

VisionBox Engineering-Tool How to create an offline-configuration from the scratch?



With double-click on the different parameters in the parameter overview window you can change parameter settings

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VisionBox Engineering-Tool How to save and reload a custom offline-configuration?



- Once the configuration is complete it needs to be saved
- Therefore, click on Settings MPA / VPM → Save configuration

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The configuration file will be saved as an xml file

- With click on Settings MPA / VPM → Export configuration as PDF there is also an option to save the custom configuration as a PDF file for documentation purposes
- Clicking on Connection → Disconnect device closes the configuration windows



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VisionBox Engineering-Tool How to save and reload a custom offline-configuration?



| 🖳 DUN | IGS VisionBox | V2.8.1 | | | |
|-------|---------------|------------|------------|--------|---|
| File | Connection | View | Settings M | | |
| Ø 🖉 | 🖉 Identif | y N | | | |
| | Discor | nect Devic | ce | | |
| | _ | | | | |
| | | | | | |
| | | Identify | | | x |
| | | O USB | | | |
| | | ○ RS23 | 32 | | |
| | | O Ether | met | | |
| | | Offlin | e N | | |
| | | | OK | Cancel | |
| | | | | | |

- To open a custom configuration, click on *Connection* \rightarrow *Identify*
- Select *Offline* in the dialog window *Identify*
- In the File Explorer window, select the custom configuration you want

VisionBox Engineering-Tool VisionBox Mini Interface-Adapter for online configuration





- USB interface cable to link the MPA41xx or VPM to the computer
 - VisionBox Mini Interface-Adapter: Material# 266290
- Only one version of interface cable to get linked to
 - MPA411x (plastic housing)

MPA 411x

- MPA4122 (metal housing)
- VPM

MPA 4122



VisionBox Engineering-Tool How to get connected for online configuration?





- For an online configuration, the computer needs to be linked via the VisionBox interface to an MPA
- Click on *Connection* \rightarrow *Identify* to start the online configuration
- In the next dialog window select the equipped extension module or No EM
- Click *OK* to read the valid configuration from the connected device
- The different windows are showing the valid parameter overview, device status and Error overview
- The status bar in the lower left corner provides information about the online connection and the connected device.

| Too Customer sp | CIIC. OLM U | v | |
|-----------------|-------------------|------------------|------------|
| 101 Cuetomer en | editio: OEM 1 | <u> </u> | |
| 2 MPA connected | MPA4112 V2.0 230V | SW: 255854A #: | cfg: No EM |

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VisionBox Engineering-Tool Access permissions for online configuration





Attention: Safety-relevant parameters can now be changed. The settings must comply with the valid regulations and standards at the installation site

Info

- Changing parameters in the connected device is only possible with OEM access level permission!
- Click on Settings MPA / VMP → Access level and select 3=OEM in the pulldown menu
- Enter the OEM Access level password *f209f209*¹⁾ for MPA41xx V2.0 and press OK
- VisionBox asks you to confirm the OEM access level by pressing the Enter button on the front of the connected MPA
- Please take care about the attention note in the info-dialog!

¹⁾ **Note:**

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OK

If a configuration created from a previous version (V1.x) is saved in an MPA 41xx V2.0, the password of the access level changes to the previous one!

VisionBox Engineering-Tool How to do an online configuration?



| le l | Connection View Settings MPA / VPM | Settings | VB Settings GUI shut-down | Auf *Laufr | verk "P:"" gespeich | ert | CDC 0 FEHI FD 0 |
|------|--|-----------|---|----------------------|---------------------|--------------|-----------------|
| | 19.0.0.1 | | | | | | CRC. UPERLER. U |
| | neter overview | | • 3 | Status | | | 4 x |
| 1 | Second Research using Status Occupies | but down | Manufastury ensuited Leat-Encod | Name | Valu | e | ~ |
| _ [* | several meserved values startup operation s | Hot Gowin | Inditiolacurer specific cost+r corio | 71 Valve 1 (X13) | Off | | |
| | Identifier | Unit | Value | ♥ Valve 2 (X14) | Off | | |
| | Release parameterisation | | No | e lantion | Off | | |
| | Address field bus | | 255 = Off | Fan / air valve (X3) | Off | | |
| | recycle count | | 0 | | | | |
| | recycle count after flame failure during safety ti | | 0 | Rame . | No | | |
| | recycle count after flame failure | | 0 | Rame 1 ION (X5) | No | | |
| | Lock out after opening safety chain | | Immediate lock out | Quality of flame | 0 µA | 1 | |
| | Air pressure switch 1: mode | | 0 = [Check for off+Off, Operation pl | Rame 2 NO | No | | |
| | Type of temperature control | | 0 = Heat request over HW input, bu | Rame 2 NC | No | | |
| | Input X17 | | 0 = No function | O Manual and and the | A | | |
| | Configuration output operation | | Value | | | x | |
| | Duration safety chain open | 5 | 020 0 | | CI Cite and | 1. | |
| | Shutter test | | P30 Pre purge time | | L EOR Faw V | aue | |
| | FM mode active | | | | | | |
| | POC tolerance time | 5 | 1. | | | stialization | |
| | Check motor end stop | | Ds | | | | |
| | Maximum waiting time until motor position is re | 5 | | | | | |
| | Input X16 | | · · · | | | 8:45 | |
| | Input X18 | | | | | | |
| | Input X19 | | | | | 0:00 | |
| | Input X20 | | Min | Ma | | | ~ |
| | Pre purge time | 8 | 0 s Raw value | 0 1/16s 2047.97 | L 175 a | | > |
| | Pre ignoon time | 5 | | | | | a × |
| | First sarety time | | OK Cancel | | | | |
| | Active name input phase 1 | | | | | | |
| | Stabilization time A | | 1 | | | | |
| | Active Report advance 2 | 2 | 1 - Dense detectors 1 VE KON entry | 1 0x11 Low Voltage | | | |
| | Active name input phase 2 | | I = Hame detector 1 AS KON only | 2 0x11 Low Votage | | | |
| | Stabilization time to | • | 1 Democrat data are 10 and 10 | 3 0x11 Low Voltage | | | |
| | Computation VI and V2 | | 1 = Permanent start gas, v1 and v2 150 | 4 Memory unused | | | |
| | Duration standard exercise | | 1420 | 5 Memory unused | | | |
| | Earne failure resource time sensor 1 | | 1 | 6 Memory unused | | | |
| | Plame failure response time sensor 2 | | 1 | 7 Memory unused | | | |
| | Duration restart plot human | | | 8 Memory unused | | | |
| | Minimum duration standard operation | | ò | 9 Memory unused | | | |
| | Ignition on to restart plot | - | bactive | | | | |
| | Pre nume time B | | 0 | | | | |
| | Check Off Position start release | - | bactive | | | | |
| | The state of the second state of the second | | 10 | | | | |

| Pa | rameter overview Online-Datalog | | |
|----------|---|-------------------------|--|
| All | General Reserved values Startup Op | peration Shut down Manu | ufacturer specific |
| # | Identifier | Unit | Value |
| 10 | Release parameterisation | | Yes |
| 12 | Address field bus | | 255 = Off |
| 13 | recycle count after flame failure du | Read parameter | |
| 14 | recycle count after flame failure | Write parameter | |
| 15 | Air pressure switch 1: mode | Read all parameters | Check for off=Off, Operation pilot burner=Of |
| 17 | Type of temperature control | Write all parameters | leat request over HW input, bus request igr |
| 18 | Input X17 | Change Parameter | No function |
| 19 20 | Configuration output operation Duration safety chain open | Show details | lame on |
| 21 | Shutter test | | 0 = [Shutter test flame detector 1=Off, Shutter te |
| 22 | EM mode.active | | Inactive |

- With double-click on the different parameters in the parameter overview window you can change parameter settings
- In online configuration mode parameters are changed directly in the connected device

Right-clicking in the parameter window opens a dialog box that allows you to read or write specific or all parameters from/to the device

VisionBox Engineering-Tool How to release an online configuration?



| Q , DUI | NGS VisionBox V2.8.1 | | | | | | | | |
|----------------|---|-------------|---------------------------------------|------------------|---|--|--|--|--|
| File | Connection View Settings MPA / VPM | Settings VB | Settings GUI shut-down | | | | | | |
| 1 | × < < < | | | | | | | | |
| Par | ameter overview Online-Datalog | | | | | | | | |
| All | All General Reserved values Startup Operation Shut down Manufacturer specific | | | | | | | | |
| # | Identifier | Unit N | /alue | | | | | | |
| 10 | Release parameterisation | | No | | | | | | |
| 11 | Address field bus | | 255 = Off | | | | | | |
| 12 | recycle count | | J | | | | | | |
| 14 | recycle count after flame failure during safety ti | | | _ | | | | | |
| 15 | Lock out after opening safety chain | | , mmediate lock out | _ | | | | | |
| 16 | Air pressure switch 1: mode | (|) = [Check for off=Off, Operation pil | _ | | | | | |
| 17 | Type of temperature control | (|) = Heat request over HW input, bu | _ | | | | | |
| 18 | Input X17 | (|) = No function | _ | | | | | |
| 19 | Configuration output operation | | 3 = Flame on | _ | | | | | |
| | | | | | | | | | |
| | Value | | | | x | | | | |
| | P10 Release parameterisation | | | 🗌 Edit raw value | • | | | | |
| | O No OK Can | © | Yes | | | | | | |
| | 0 1.00001.01 | o parqo on | , | | | | | | |

- Once parameters have been changed the device responds with error message F60
- The parameter change needs to be released!
- Double-click on parameter *P10=Release parameterization*
- Select Yes in the popup window and click on OK
- All parameter changes will be released, and the online configuration in the connected device can be completed
- The custom configuration can be saved as described before

VisionBox Engineering-Tool How to adopt a previous V1.x configuration in a V2.0 device?



File

11

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- Click on Settings MPA / VPM → Load configuration to open a former V1.x configuration in the online configuration
- A pop-up window informs about differences/ changes that needs to be taken care of

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- Parameters whose variation/content has been changed
- Parameters that didn't exist before

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OK

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VisionBox Engineering-Tool How to adopt a previous V1.x configuration in a V2.0 device?



| Pa | arameter overview Online-Datalog | | |
|-----|---|--|--|
| All | General Reserved values Startup Operation S | hut down Manufacturer specific Nicht verknüpft | |
| # | Identifier | Unit Value | |
| 10 | Release parameterisation | No | |
| 11 | Address field bus | 255 = Off | |
| 12 | recycle count 450ne of the limits | s changed: can not be saved automatically | |
| | Parameter overview Online-Datalo | P | |
| | All General Reserved values Startup | Operation Shut down Manufacturer specific Nicht verknüpft | |
| | # Identifier | Unit Value | |
| | 10 Release parameterisation | No | |
| | 11 Address field bus | 255 = Off | |
| | 12 recycle count 2022 | 10-12: MPA Customer Training in | |
| | | | |
| | Parame Paris | (Webansicht) | |
| | All Gen | | |
| | # Identifier | Unit Value | |
| | 16 Air pressure switc | h 1: mode 0 = [Check for off=Off, Operation pilot burner=Off, Operation main burner=Off, | |
| | 17 Type of temperate | ure control The parameter is defined differently in the loaded configuration. Parameter value unchanged | |
| | 18 Inovit X17 Paramet | 0 = No function | |
| | All Gen | eral Reserved values Startup Operation Shut down Manufacturer specific Nicht verknünft | |
| | u u u u u u u u u u u u u u u u u u u | | |
| | # | | |
| | 25 | Maximum waiting time until motor position is reached s 30 | |
| | 27 | Input X18 0 = No function | |
| | Paramet All Gene # 25 26 27 | er overview Online-Datalog eral Reserved values Startup Operation Shut down Manufacturer specific Nicht verknüpft Identifier Unit Value Maximum waiting time until motor position is reached s 30 Input X1or Parameter not found in loaded config. Parameter value unchanged 0 = No function | |

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VisionBox Engineering-Tool How to adopt a previous V1.x configuration in a V2.0 device?



- Color-coded parameters must be observed
- Part of the new parameters are those for the flexible function assignment to digital inputs
- Finally, the changed parameters have toe be released as described before

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When using a V1.x device without any custom-specific changes to the default settings the equivalent V2.0 version mostly should usually fit without major changes

Apply what you have learned and put it into practice



Do you have any questions?

Thank you very much!







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