

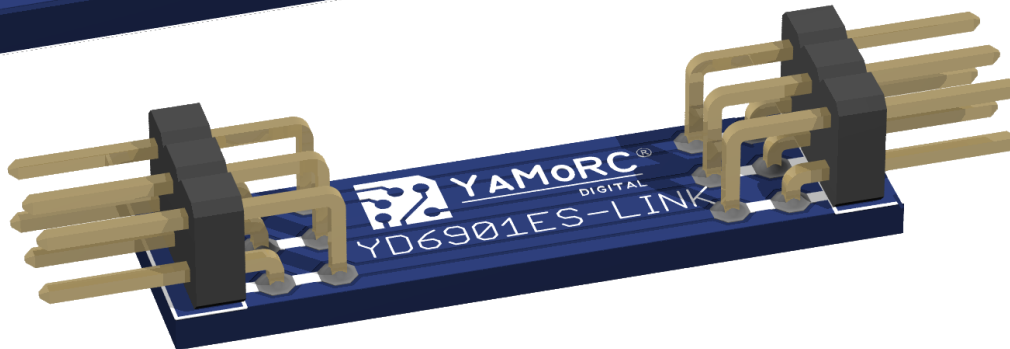
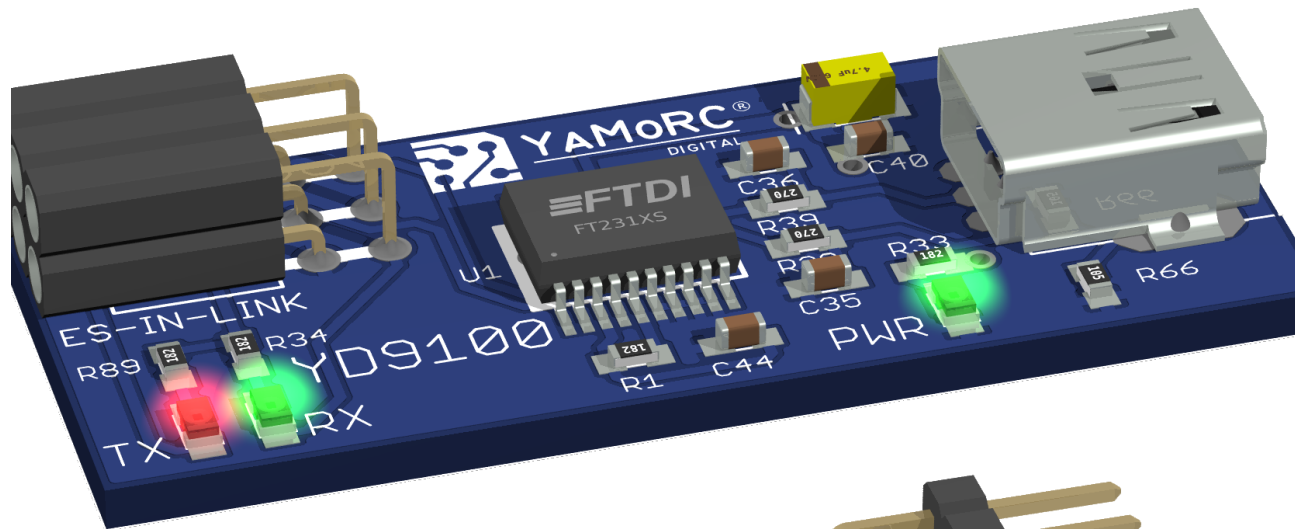


YAMoRC®
DIGITAL

YD9100

USB CONFIGURATION MODULE

(2024-05-14)



Designed by Karst Drenth
Made in Germany
Assembled in NL

Index

Description 3

Technical data 3

Important notes 4

Connecting the YD9100 to a module of the YD8xxx series and what must be observed..... 5

YD9100 - Start configuration of the connected module..... 5

YD8044 Configuration options..... 6

YD8008 Configuration options..... 7

YD8116 Configuration options..... 8

 YD8116 Open the configuration menu..... 8

 YD8116 Module properties..... 9

 YD8116 Configure outputs..... 10

What is DCCext and why is it beneficial to use it?

A short look..... 11

YD7403 Booster configuration options..... 13

 YD 7403 Track Output configure..... 13

 YD7403 control..... 14

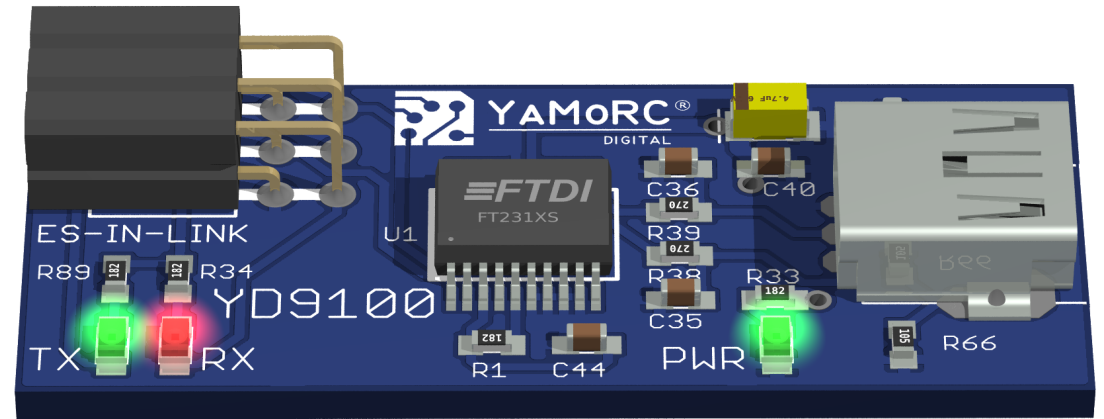
 YD7403 Configuring messages..... 14

 YD7403 Configuring events..... 15

 YD7403 Expert configuration..... 15

YD9100 - Execute update process for a connected module..... 16

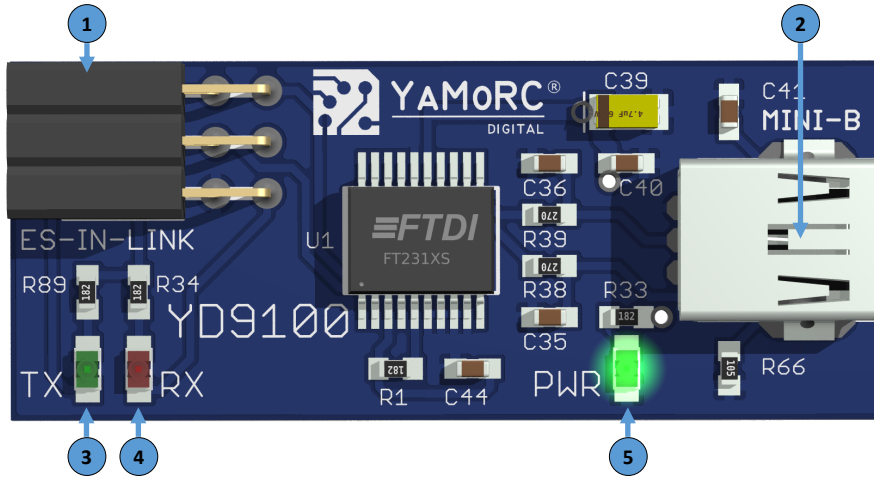
Warranty..... 18



Description


- The **YD9100** is a USB configuration module that can be used to configure all other modules that have ES-PGM-LINK or an ES-OUT-LINK interface.
- The **YD9100** provides a USB interface via virtual COM port.
- With the help of the PC-based configuration software, the basic configuration of the connected modules can be easily changed and adapted.

Hardware overview



1	ES-IN-LINK	Plug connector to the module that is to be programmed
2	Mini-USB Connector	Plug connection to the PC
3	TX Green LED	Activity display Send data via ES-LINK. (flashes when data is exchanged)
4	RX Red LED	Activity display Receive data via ES-LINK. (flashes when data is exchanged)
5	PWR Green LED	Power supply available via USB (Permanent light)

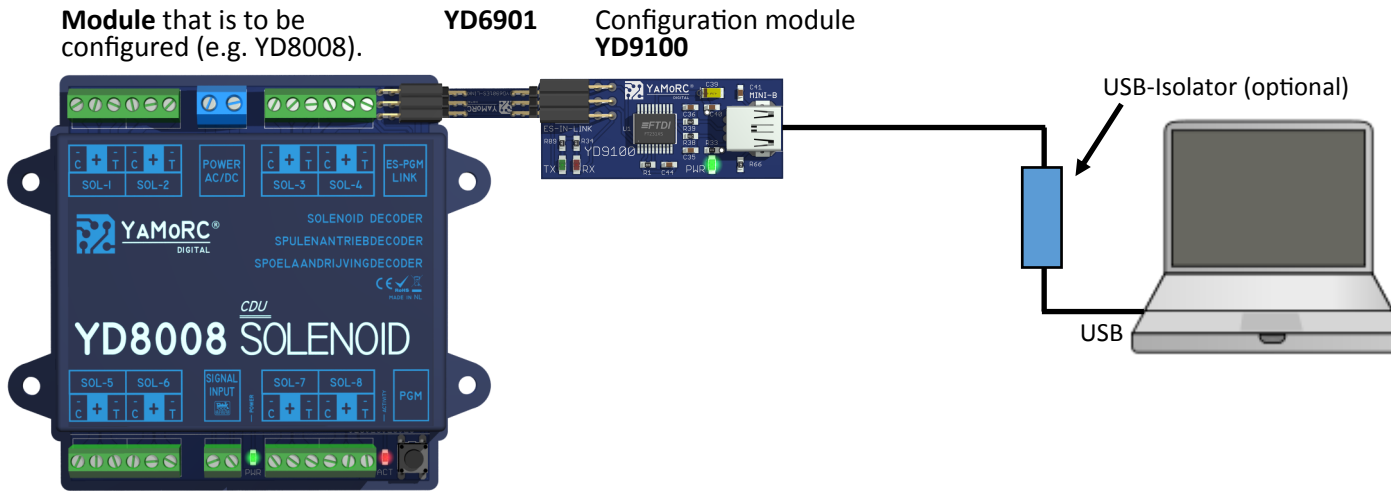
Important notes:

- The YD9100 is intended exclusively for operation on an electric model railway.
- The YD9100 is not a toy and is therefore not suitable for children under the age of 14.
- Never operate the YD9100 unsupervised.
- Voltage sources (power supplies, transformers, etc.) must comply with the current VDE/EN and CE standards.
- The voltage sources used (power supplies, transformers) must comply with protection class 2. Failure to comply may result in serious damage to the YD9100. The voltage sources must be marked with this symbol. Further information on the protection class can be found, for example, here:  <https://www.google.com/search?q=schutzklasse+2&oq=schutzklasse+2>
- Voltage sources must not exceed a maximum output current of 3A.
- Voltage sources must be fused in such a way that a cable fire cannot occur in the event of a fault.
- A common earth connection of different voltage sources or circuits is not permitted. This will destroy the YD9100.
- The YD9100 must never be installed near sources of intense heat such as radiators or places exposed to direct sunlight. in direct sunlight. Therefore, install the YD9100 in a place with sufficient ventilation to be able to dissipate the waste heat.
- The YD9100 is designed for dry indoor use only. Therefore, do not operate the YD9100 in environments with large fluctuations in temperature and humidity or outdoors.
- Do not attempt to remove the heat shrink tubing from the YD9100. Improperly performed actions can lead to the destruction of the YD9100.

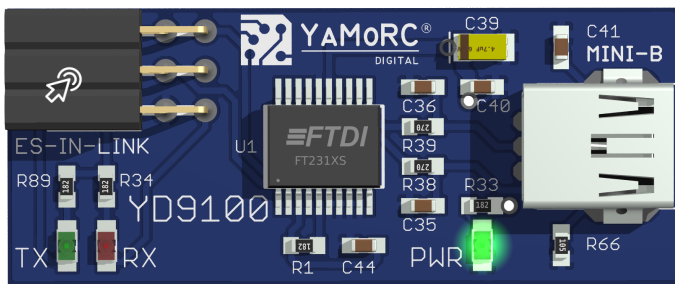
Connecting the YD9100 to a module of the YD8xxx series and what must be observed

The YD9100 is connected to the desired module via the enclosed YD6901 adapter. Alternatively, for longer distances between the modules, the YD9100 can be connected to the module to be configured using a YD6902ES-EXT adapter and a standard RJ45 cable.

- The power supply of the **YD8008**, **YD8044** and **YD8116** (Power AC/DC) must not be provided via the digital control centre and DCC. (Track Out of the central unit).
- To test the settings, a separate voltage source AC or DC can be connected to "Power AC/DC" of the switching decoder.
- To prevent ground loops via USB, the YD9100 should always be connected alone to the PC or laptop via USB.
- The use of a USB isolator is recommended.



YD9100 - Start configuration of the connected module



To start the configuration, simply click on the ES-IN Link symbol on the YD9100.



Select the module you want to configure by clicking on it, and start the configuration software by double-clicking or with the green tick.

If the connected module is not shown in the list, it is necessary to refresh the selection list.

- 1
- 2

YD8044 Configuration options

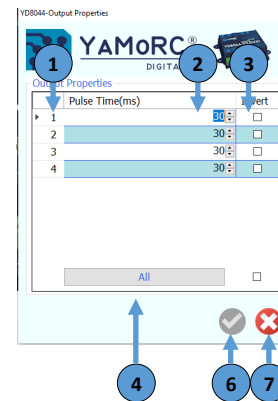
After the desired module has been selected from the drop-down list by double-clicking, the module can be configured individually. The individual configuration menus are called up by clicking on the desired buttons.

Configuration menus open



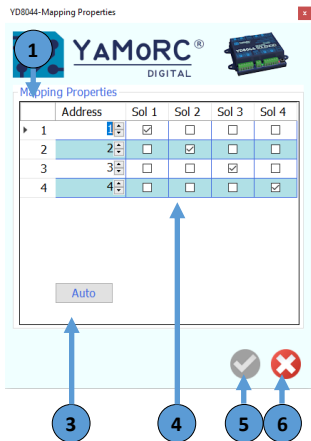
- A) **Pulse duration** for each output configure individually
- B) **Firmware Update**
- C) **Adjust** module properties
- D) **Address allocation and switching matrix** adjust

Configure pulse duration and invert outputs



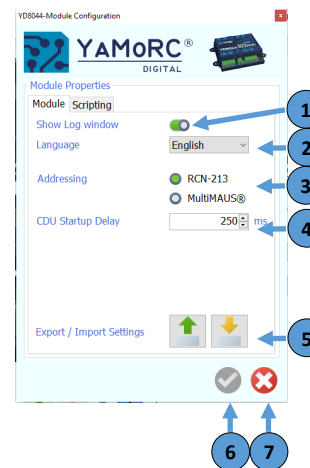
- 1) **Hardware output number (SOL-1 - SOL-4)**
(cannot be changed, only used for display)
- 2) **Configure pulse time** individually in milliseconds for each output.
- 3) **Check Box Invert output signal.**
If this check mark is set, the connections C and T are swapped at SOL-x. This can be used if, for example, the actual switching position of the turnout right/left is wrong.
- 4) **Click** to preset the times for ALL outputs with the first configured value..
- 5) **Save settings**
The settings are only permanently applied when the green button is ticked.
- 6) **Close menu**

Configure addresses and switching matrix



- 1) **Hardware output number (SOL-1 - SOL-4)**
(cannot be changed, only used for display)
- 2) **Individual accessory address**
Each output (SOL-1-SOL-4) can be assigned a freely selectable accessory address in the DCC address range 1-2048.
- 3) **By clicking**, the accessory addresses are automatically preassigned consecutively..
- 4) **Configure output switching matrix**
By setting the check marks, an accessory address can be assigned, e.g. a second output. The ticked outputs are then switched together.
- 5) **Save settings**
The settings are only permanently applied when the green button is ticked.
- 6) **Close menu**

Configure module properties

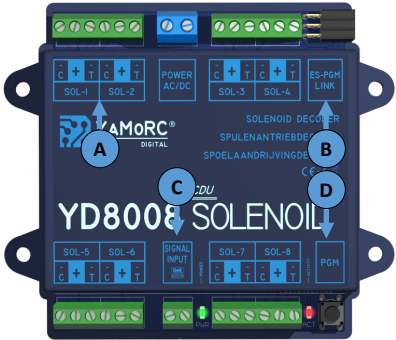


- 1) **Show log window**
- 2) **Select language**
- 3) **Select basic address**
Here you can select whether the YD8xxx is operated on a Multimouse control unit or on a control unit that operates according to RCN-213 (factory setting).
- 4) **CDU Startup Delay**
After this time in milliseconds, the CDU (current storage unit) of the YD8xxx starts charging. It may be useful to adjust this value if several YD8xxx are operated on a small power supply unit or transformer.
- 5) **Export/Import of the settings**
With these two buttons, the current configuration of the module can be saved (export) and, for example, transferred to another module of the same series (import).
- 6) **Save settings**
The settings are only permanently applied when the green button is ticked.
- 7) **Close menu**

YD8008 Configuration options

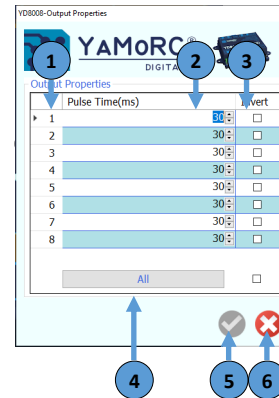
After the desired module has been selected from the drop-down list by double-clicking, the module can be configured individually. The individual configuration menus are called up by clicking on the desired buttons.

Configuration menus open



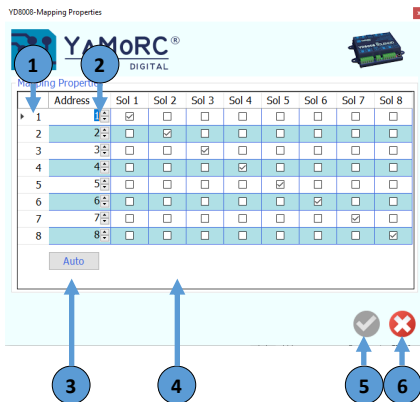
- A) **Pulse duration** for each output configure individually
- B) **Firmware Update**
- C) **Adjust** module properties
- D) **Address allocation and switching matrix** adjust

Configure pulse duration and invert outputs



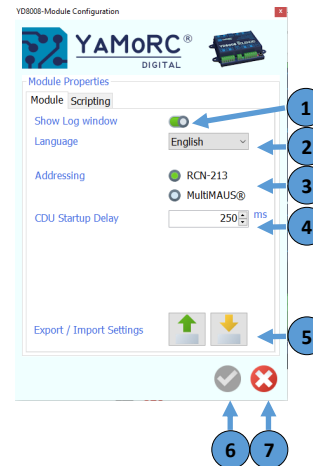
- 1) **Hardware output number (SOL-1 - SOL-8)**
(cannot be changed, only used for display)
- 2) **Configure pulse time** individually in milliseconds for each output.
- 3) **Check Box Invert output signal.**
If this check mark is set, the connections C and T are swapped at SOL-x. This can be used if, for example, the actual switching position of the turnout right/left is wrong.
- 4) **Click** to preset the times for ALL outputs with the first configured value..
- 5) **Save settings**
The settings are only permanently applied when the green button is ticked.
- 6) **Close menu**

Configure addresses and switching matrix



- 1) **Hardware output number (SOL-1 - SOL-8)**
(cannot be changed, only used for display)
- 2) **Individual accessory address**
Each output (SOL-1-SOL-8) can be assigned a freely selectable accessory address in the DCC address range 1-2048.
- 3) **By clicking**, the accessory addresses are automatically preassigned consecutively..
- 4) **Configure output switching matrix**
By setting the check marks, an accessory address can be assigned, e.g. a second output. The ticked outputs are then switched together.
- 5) **Save settings**
The settings are only permanently applied when the green button is ticked.
- 6) **Close menu**

Configure module properties

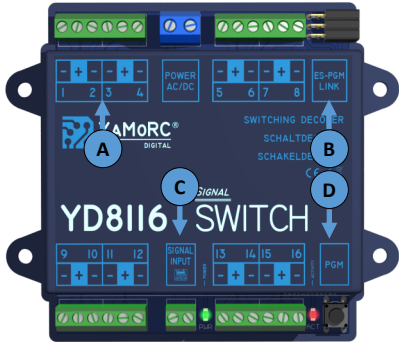


- 1) **Show log window**
- 2) **Select language**
- 3) **Select basic address**
Here you can select whether the YD8xxx is operated on a Multimouse control unit or on a control unit that operates according to RCN-213 (factory setting).
- 4) **CDU Startup Delay**
After this time in milliseconds, the CDU (current storage unit) of the YD8xxx starts charging. It may be useful to adjust this value if several YD8xxx are operated on a small power supply unit or transformer.
- 5) **Export/Import of the settings**
With these two buttons, the current configuration of the module can be saved (export) and, for example, transferred to another module of the same series (import).
- 6) **Save settings**
The settings are only permanently applied when the green button is ticked.
- 7) **Close menu**

YD8116 Configuration options

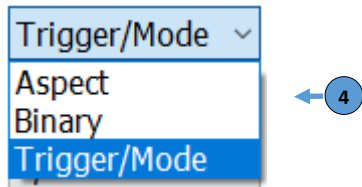
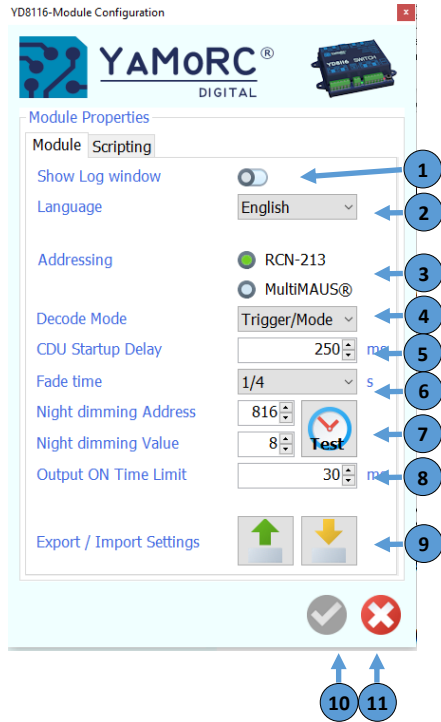
After the desired module has been selected from the drop-down list by double-clicking, the module can be configured individually. The individual configuration menus are called up by clicking on the desired buttons.

Konfigurationsmenüs aufrufen



- A) **Pulse duration** for each output configure individually
- B) **Firmware Update**
- C) **Adjust** module properties
- D) **Address allocation** and **switching matrix** adjust

Configuration menus open



- 1) **Show log window**
- 2) **Select language**
- 3) **Select basic address**
Here you can select whether the YD8xxx is operated on a Multimouse control unit or on a control unit that operates according to RCN-213 (factory setting).
- 4) **Select the **decoding mode** of the YD8116.**
*This selection determines how the YD8116 evaluates the DCC switching signal. The YD8116 can control the outputs via the relatively new **DCCext format** or conventionally via normal DCC accessory addresses. A brief insight into how the two options differ can be found on the next page. Please note that not all command stations support the DCCext format.*
Options:

Aspect	Control only via DCCext aspects.
Binary	Control only via normal DCC accessory addresses
Trigger/Mode	Control via DCCext aspects or DCC accessory addresses possible (factory setting)
- 5) **Current storage charging delay**
After this time in milliseconds, the CDU (current storage unit) of the YD8xxx starts charging. It may be useful to adjust this value if several YD8xxx are operated on a small power supply unit or transformer.
- 6) **Fading time**
Here you can configure the fading time (fading) between the individual signal images.
- 7) Settings for **dimming** the signals at night
 - Night **fade address**
The **accessory address** entered here activates the dimming of the signals.
 - Night fade **value**
The **brightness** is reduced with this value as soon as the accessory address for dimming is activated.

Value 1	=	full dimming
Value 31	=	full brightness
- 8) **Output ON time limited**
If an output is configured as a switch, for example, the pulse duration is limited by this value.
- 9) **Export/Import** of the settings
With these two buttons, the current configuration of the module can be saved (export) and, for example, transferred to another module of the same series (import).
- 10) **Save settings**
The settings are only permanently applied when the green button is ticked
- 11) **Close menu**

Configuration of the outputs

Definition: DB H/V Blocksignal

Device ID: 0

Addresses: First Address: 1, Number of Addresses: 1

Outputs: First Output: 1, Number of Outputs: 1

Blank between Aspects: [Off]

Fade between Aspects: [On]

Limit On-time of outputs: [On]

Blinks per minute: 75

Dark Aspects: --

No Initialization: [On]

Aspect	Out 1	Out 2	Tr/ Mode	Steady	Blink On	Blink Off
0	On	Off	1R	[Red Signal]	[Green Signal]	[Green Signal]
*	Off	Off	2G	[Green Signal]	[Green Signal]	[Green Signal]

17: Camera icon

18: Copy icon

19: Paste icon

20: Delete icon

21: Up arrow icon

22: Down arrow icon

23: Down arrow icon

24: Checkmark icon

25: Cross icon

- 1) Selection of a ready-made **initial definition**
- 2) Internal **device ID** of the selected definition
- 3) **First DCC accessory address** of the selected output definition.
If the selected e.g. signal occupies several DCC accessory addresses, the number of addresses is displayed here.
- 4) **First hardware output (Out 1-16)** to which the signal is connected.
If the e.g. signal occupies several hardware outputs, the number of occupied physical outputs on the YD8116 is displayed here.
- 5) Select **dark switching** between the individual aspects if, for example, the signal requires this function.
- 6) Switch the **cross-fade** function between the aspects on or off.
- 7) **Time limit** of the outputs switch on or off the outputs
- 8) **Flashing per minute** of an output if this requires e.g. signal.
- 9) **Dark aspect** if the e.g. signal provides this function.
- 10) **Nicht initialisieren** der Ausgänge beim Einschalten der Versorgungsspannung.
This function can be activated to prevent the first aspect from being switched automatically when switching on.
- 11) **Right-click here** to specify a **default aspect** that differs from the first entry in the configuration list. A desired dark aspect can also be defined here.
- 12) **Aspect number** of the e.g. signal definition for DCCext.
*This defines how the individual outputs are controlled via DCCext aspects. In this example, **aspect 0** switches the signal to red and **aspect 16** switches the signal to green. Possible aspect numbers are 0-255. For a brief overview of what DCCext is, see page 11.*
- 13) **Output assignment (Out 1-Out X)**
Here you define how the desired hardware output is switched.
- 14) **Trigger Mode**
Here you can define how the individual outputs are controlled via normal DCC accessory addresses. In this example, accessory address 1R switches the signal to red and accessory address 1G switches the signal to green.
- 15) **Pictorial** representation of the switching term for the control panel
- 16) **Pictorial** representation that activates the flashing for the control panel

Configuration of the outputs

- 17) Create and save a **screenshot**
- 18) **Copying and cutting** the current definition to the clipboard
- 19) **Copy** the current definition to the **clipboard**
- 20) **Paste** a copied definition from the **clipboard**
- 21) **Export** the current unit definition
- 22) Import and merge a device definition (only images and aspects)
- 23) Importing a complete unit definition
- 24) **Save** configuration
- 25) **Cancel** configuration

Aspects

Aspect	Out 1	Out 2	Tr/ Mode	Steady	Blink On	Blink Off
0	On	Off	1R			
1	Off	Off	2G			

Callouts 12-16 point to Aspect 0, Aspect 1, Out 1, Out 2, and Tr/ Mode respectively.

What is DCCext and why is it beneficial to use it? A short look!

The **YD8116** can be controlled either via "normal" DCC turnout addresses or via the relatively new **DCCext format**.

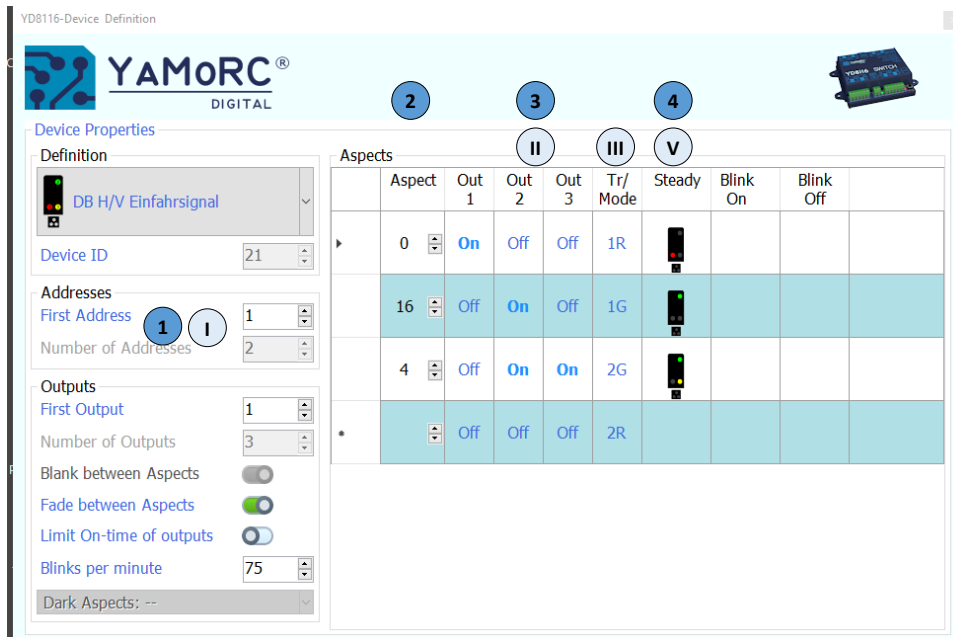
Shortly summarized the distinction:

With multiple term signals, switching via "normal" DCC addresses can become complicated. Different DCC switching commands must be executed in a certain time and sequence. Which of course also consumes several DCC addresses. If the DCCext format is used, only one DCC address is needed for multiple signal terms to control the different signal terms. The DCC address is simply assigned a value from 0 to 255. Each value can be assigned to a signal aspect individually.

What is the advantage of DCCext?

- ⇒ No complicated DCC address combinations have to be switched!
- ⇒ The use of DCCext saves normal turnout addresses!
So for an exit signal with four switching terms only one turnout address is needed, while conventionally two DCC addresses are needed
- ⇒ Up to 255 switching aspects can be freely assigned.

For more detailed information, please refer to the **RCN-213** standard. It should be noted that the control panel you are using must support the DCCext format.



Aspect	Out 1	Out 2	Out 3	Tr/ Mode	Steady	Blink On	Blink Off
0	On	Off	Off	1R			
16	Off	On	Off	1G			
4	Off	On	On	2G			
*	Off	Off	Off	2R			

Example:

DCCext

- 1) Address with which the signal is switched.
- 2) Default aspect number for the respective switching term.
- 3) Initial configuration of the switching terms.
- 4) Pictorial representation of the switching term for the control panel.
The signal selected signal occupies only one DCC address.

DCC

- I. Start addresses with which the signal is switched.
The signal needs two DCC addresses to be able to display all signal terms.
- II. Initial configuration of the switching terms.
- III. Trigger/Mode.
Two normal DCC addresses (1R, 1G, 2G) are required for switching the individual signal terms.
- IV. Pictorial representation of the switching term for the control panel.
The signal selected signal occupies two DCC address.

We have deliberately decided to leave all configuration options open to the user. It is even possible to realise a mixed operation via DCC and DCCext. For this reason, the trigger/mode (how one would control the selected signal via DCC) is always displayed.

YD7403 Booster configuration options

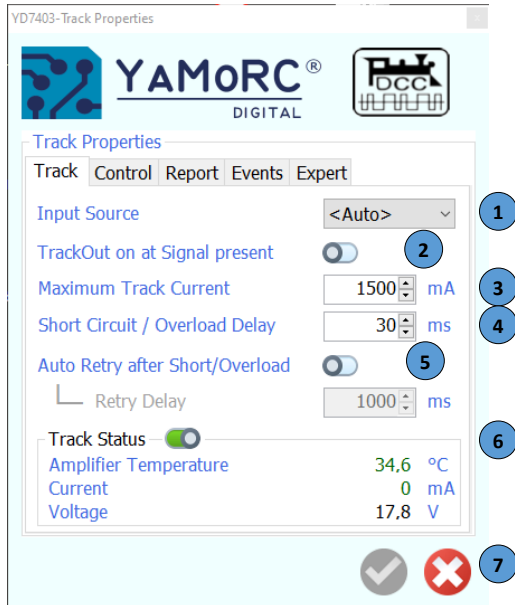
Once the desired module has been selected from the selection list by double-clicking, the module can be configured individually. The individual configuration menus are called up by clicking on the desired buttons.

Call up configuration menus



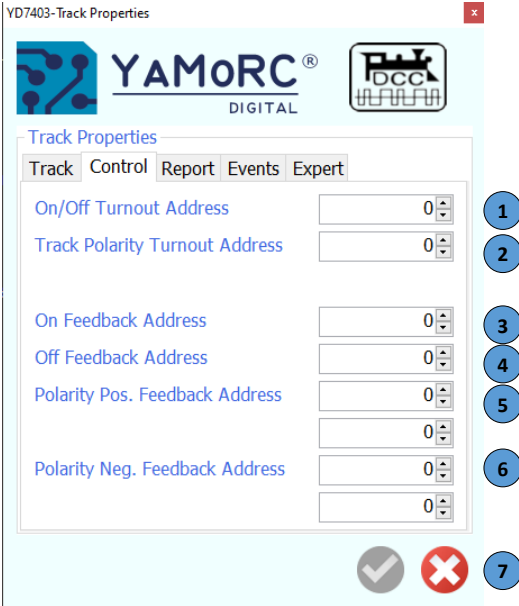
- A) **Track output configuration** (e.g. signal source DCC signal, maximum track current, short circuit delay, configuration for controlling the booster, configuration of the booster's feedback sensors, temperature monitoring, etc.)
- B) **Loconet[®] Features** (e.g. Loconet feedback monitor)
- C) **ES-PGM-Link** (e.g. perform firmware update,)
- D) **Booster general configuration** menu (e.g. select language, activate logging window, multifunction button function, LNCV module address, switch-on delay, data export/import).

YD 7403 Track Output configure



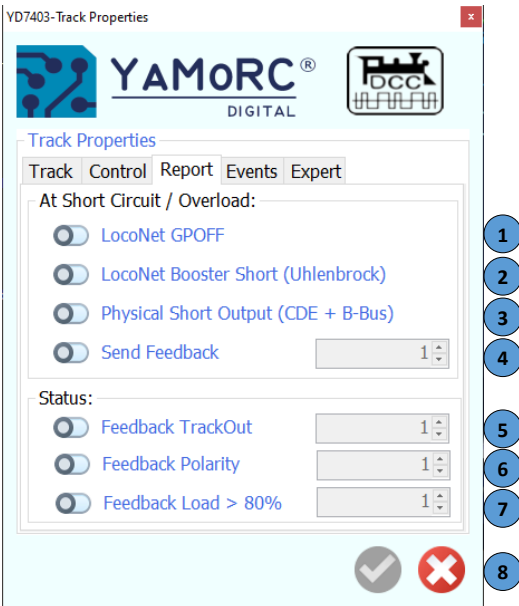
- 1) **Input signal source**
 - <Auto> *The YD7403 automatically determines the input source of the DCC signal.*
 - Loconet[®] B *The LocoNet[®] B input is selected as the input source of the DCC signal.*
 - CDE/Sniffer *The CDE or the sniffer input is selected as the input source of the DCC signal.*
 - B-Bus[®] *The B-Bus[®] input is selected as the input source of the DCC signal.*
 - Internal *Currently still without function.*
- 2) **Track on at Signal present**
The YD7403 activates the track voltage as soon as a valid DCC signal is detected. If this switch is switched off, the YD7403 must be activated via an accessory address (points command) or a dedicated feedback unit.
- 3) **Maximum track current**
The maximum track current that the YD7403 makes available on the track is set here.
- 4) **Short circuit/overload Delay**
Delay of the short shot switch-off by the set time.
- 5) **Automatic retry after short/overload**
If this switch is activated, the YD7403 automatically switches the track output back on after the set time.
- 6) **Track status**
By activating this switch, the status information of the YD7403 for temperature, track current and track voltage is made available.
- 7) **Save** configuration or **cancel** and close.

YD7403 control



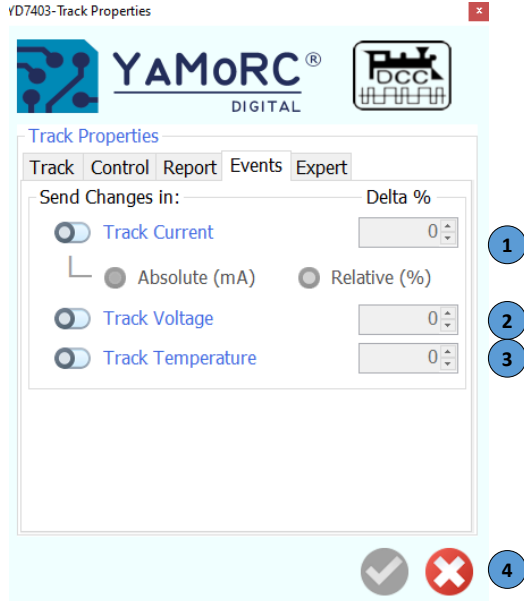
- 1) **On/OFF Turnout Address***
The YD7403 switches the track output on or off with the accessory address entered here.
- 2) **Track Polarity Turnout Address***
The YD7403 changes the polarity of the track output with the accessory address entered here.
- 3) **On feedback address***
If the sensor entered here becomes active, the YD7403 switches the track output ON.
- 4) **Off Feedback address***
If the sensor entered here becomes active, the YD7403 switches the track output OFF.
- 5) **Positive polarity feedback address***
If the feedback signal entered here becomes active, the YD7403 changes the polarity of the track output to positive.
- 6) **Negative polarity feedback address***
If the feedback signal entered here becomes active, the YD7403 changes the polarity of the track output to Negative.
- 7) **Save** configuration or **cancel** and close.
**The YD7403 can be controlled in two different ways. One is via accessory addresses (turnout commands) or by activating feedback signals from the LocoNet®.*

YD7403 Configuring messages



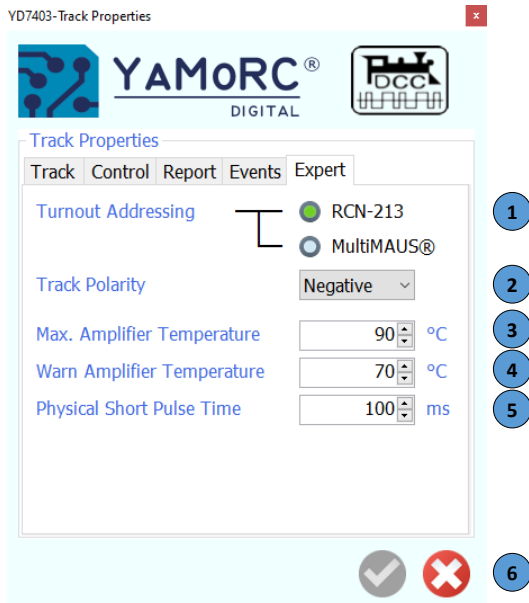
- 1) **LocoNet® GPOFF**
Send LocoNet® OPC_GPOFF report (general command to globally switch off ALL boosters or the control center.
- 2) **LocoNet® "Booster Short" (Uhlenbrock®)**
This switch activates the extended short-circuit message according to the Uhlenbrock standard.
- 3) **Physical short circuit output (CDE+B-Bus®)**
This switch activates the short-circuit message via CDE or the B bus.
- 4) **Send feedback**
This switch can be used to trigger a feedback signal via LocoNet®. The feedback signal entered here becomes active as soon as the YD7403 reports a short circuit or an overload.
- 5) **Feedback Track Out**
This switch can be used to trigger a feedback signal via LocoNet®. The feedback signal entered here becomes active as soon as the YD7403 activates the track output.
- 6) **Feedback Polarity**
This switch can be used to trigger a feedback signal via LocoNet®. The feedback signal entered here becomes active as soon as the YD7403 changes polarity.
- 7) **Feedback Load >80%**
This switch can be used to trigger a feedback signal via LocoNet®. The feedback signal entered here becomes active as soon as the load of the YD7403 rises above 80%.
- 8) **Save** configuration or **cancel** and close.

YD7403 Configuring events



- 1) **Track Current**
The difference at which an event is triggered is defined here. You can also select whether the delta should be calculated in absolute mA or relative %.
- 2) **Track Voltage**
The difference at which an event is triggered is defined here.
- 3) **Track Temperature**
The difference at which an event is triggered is defined here.
- 4) **Save** configuration or **cancel** and close.

YD7403 Expert configuration

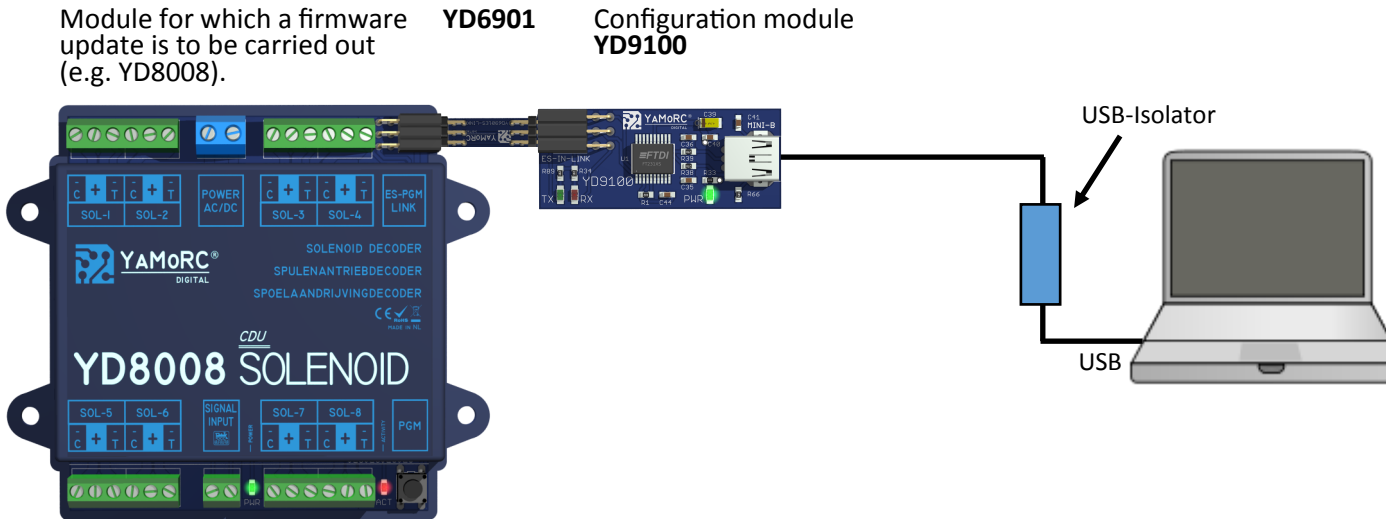


- 1) **Turnout Addressing**
Here you can select whether the YD7403 is operated on a Multimaus control panel or on a control panel that operates according to RCN-213 (factory setting).
- 2) **Track Polarity**
Polarity of the Railcom® cut-out. If there are problems with short-circuit detection with Railcom®-capable boosters, changing the polarity can solve the problem.
- 3) **Maximum amplifier temperature**
The temperature at which the YD7403 switches off is defined here.
- 4) **Amplifier temperature warning**
The temperature above which the YD7403 issues a warning message can be defined here.
- 5) **Physical Short Pulse Time**
Time of the switching duration of the physical short-circuit message. If a zero is entered, the message is output continuously.
- 6) **Save** configuration or **cancel** and close.

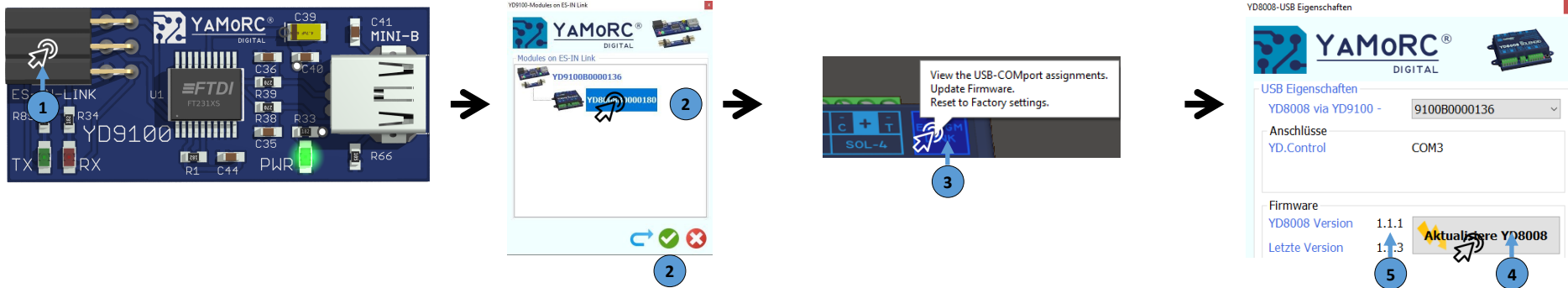
YD9100 - Execute update process for a connected module

Please note important information:

- **ALL** connections carrying voltage must be disconnected from the module (Signal In, Track Out, Power AC/DC, power supply connection, LocoNet[®], XpressNet[®], etc.)!
- The module that is to receive a firmware update must be connected to the PC via USB on its own. If this is not possible and other devices are connected via USB, a USB isolator must be used between the USB port of the PC and the YD9100.
- Before updating the firmware, it is essential to back up the current configuration using the export function.
- Once the firmware update has been successfully completed, disconnect the module from the YD9100. After approx. 30 seconds, the module can be reconnected to the YD9100 to restart it.
- It is essential to check the configuration before recommissioning the module. If the configuration is not correct, the saved configuration can be imported back into the module using the import function.
- Only after the configuration has been checked, disconnect the YD9100 from the module and restore the connections for voltage and others.



The YD9100 is connected to the desired module using the enclosed YD6901 adapter. Alternatively, for longer distances between the modules, the YD9100 can be connected to the module to be configured using a YD6902ES-EXT adapter and a standard RJ45 cable.



- 1) To start the configuration, click on the ES-IN Link symbol on the YD9100.
- 2) Select the module by clicking on it and start the configuration software by double-clicking or with the green tick.
(If the module is not recognized by the YD9100, the view can be updated by clicking on the blue arrow).
- 3) After the configuration interface of the module has been started, open the menu for the firmware update by clicking on "ES-PGM Link".
- 4) Press the "Update YD8008" button and follow the instructions to start the update.
- 5) These two information displays show the firmware installed on the YD8008 (e.g. YD8008 version 1.1.1) and the firmware version contained in the current software version of the tool (e.g. latest version 1.1.3).

Warranty

24 months warranty from date of purchase

Dear Customer,

Congratulations on your purchase from YaMoRC. YaMoRC's high quality products have been manufactured using modern manufacturing processes and have been subjected to careful quality control and tests.

Therefore, when purchasing a YaMoRC product, the company YaMoRC grants you a manufacturer's warranty of 24 months from the date of purchase in addition to the national warranty rights to which you may be legally entitled to, from your YaMoRC specialist dealer as contractual partner.

Warranty conditions:

This warranty applies to all YaMoRC products purchased from a YaMoRC dealer. Warranty services are only provided if proof of purchase is presented. Proof of purchase is the purchase receipt from the YaMoRC specialist dealer. It is therefore recommended to keep your purchase receipt safe.

Content of the guarantee/exclusions:

The warranty includes, at YaMoRC's discretion, the free repair or free replacement of the defective part, which can be proven to be due to design, manufacturing, material or transport faults. For this purpose, you must send the decoder to us properly stamped. Further claims are excluded.

The warranty claims are void:

1. in the case of general wear and tear at expected locations (e.g. screw terminals).
2. in the case of modification of YaMoRC products with parts not approved by the manufacturer.
3. in the case of modification of parts; especially by opening the housing.
4. if the product is used for purposes other than those intended by the manufacturer.
5. if the instructions given by YaMoRC in the operating manual have not been thoroughly read by the user & risked mis-use of the product.

The warranty period is not extended in the case of repair or replacement.

Warranty claims can be made either to your dealer, or by sending the claimed product directly to YaMoRC, together with the warranty certificate, proof of purchase and description of the defect.



Drenth Design & Consulting B.V.

Glazeniershorst 209

NL-7328 TJ APELDOORN

Liability: Drenth Design & Consulting B.V.

Phone: +31643392605

E-Mail: ddc@yamorc.com

Directors: Gabriele Drenth-Viertel, Karst Drenth

Trade register: 72184728

VAT No/Tax ID: NL-859019901B01