YAMORC®
DIGITAL

# YD7001-E

## Multi LAN Protocol Command Station

## Quick start

(2024-01-02)




Designed by Karst Drenth
Made in Germany
Assembled in NL

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## Description

- The **YD7001-E** is a DCC command station with a maximum output power of 3A. RailCom® CutOut generation is also supported.
  *Attention! The digital formats mfx®, Motorola and similar are not supported! The YD7001 is a pure DCC command station.*
- The **YD7001-E** can control a maximum of 117 locomotive addresses simultaneously.
- 2048 DCC **accessory addresses** can be controlled. The **YD7001-E** also supports the **DCCext** format for accessory decoders (e.g. YD8116).
- The **YD7001-E** is equipped with bus connections for Loconet®T for feedback units and hand controllers, Loconet®B for boosters, XpressNet® for feedback units and hand controllers, Roco® B-Bus for boosters and S88 ES-Link.
- All **YaMoRC** modules that have an ES-Link connection (e.g. YD8008, YD8044, YD8116, YD7403, etc.) can be configured via the S88 ES-Link.
- The **YD7001** has a full programming track.
- Locomotives and accessory addresses are controlled either via the YaMoRC tool, a handheld controller, an app or a PC programme (WDP®, Itrain® or similar)
- Various IR remote controls (e.g. Uhlenbrock®, Piko®DigiFern) can be used to control locomotives via the integrated IR receiver.

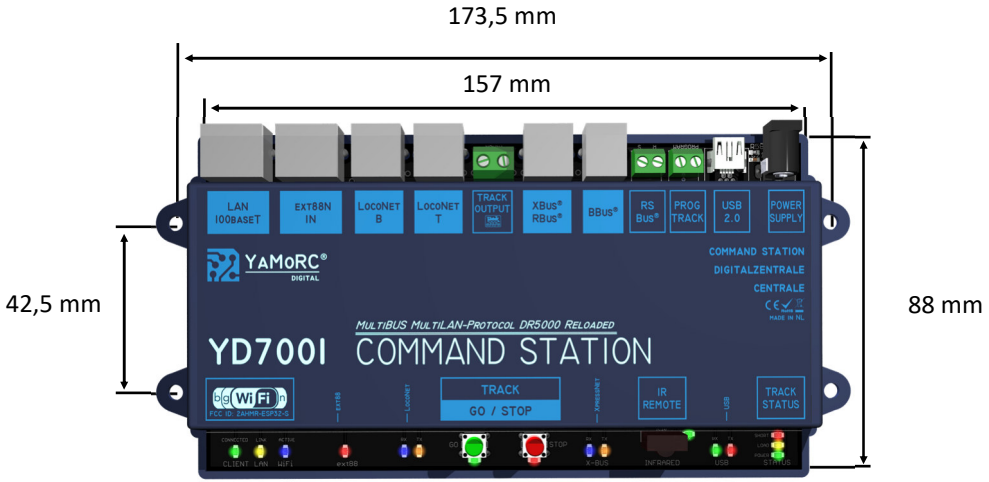
## Technical data

| | |
|---|---|
| Track Out load capacity | 3A<br>15-19 VDC |
| Bus connection options | Loconet® T, Loconet® B,<br>XpressNet®<br>Roco® B-Bus,<br>S88 ES-Link, |
| Network | WiFi - Access - Piont<br>100 Base T Lan |
| Protocols | Loconet® (USB, Netzwerk)<br>XpressNet® (USB, Netzwerk)<br>Z21® (Netzwerk)<br>WiThrottle® (Netzwerk) |
| Dimensions of the housing | 157 mm x 88 mm x 22 mm |
| Hole distance | 173,5 mm, 42,5 mm |

## Mounting

The YD7001-E is mounted using the four mounting holes on the side of the housing.

**Dimension drawing**



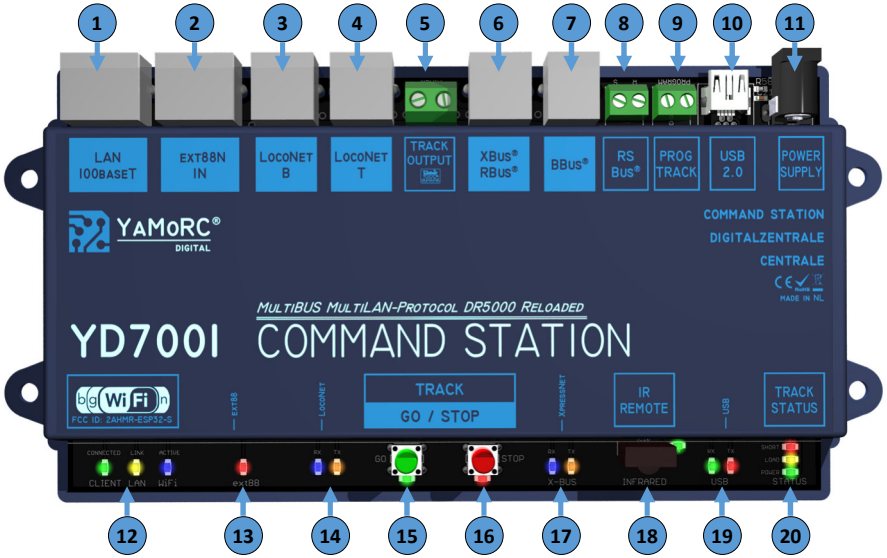
## Important notes:

- The YD7001-E is intended exclusively for operation on an electric model railway.
- The YD7001-E is not a toy and is therefore not suitable for children under the age of 14.
- Never operate the YD7001-E unattended.
- The power supply unit 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 YD7001-E. The voltage sources must be marked with this symbol (illustrated below).

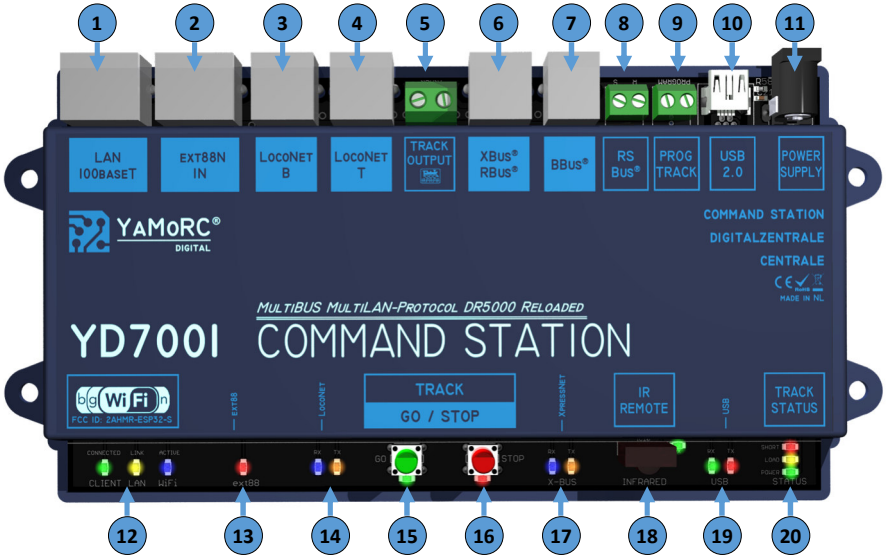
  Further information on the **P**rotection **C**lass 2 can be found here: https://www.xppower.com/resources/blog/iec-protection-classes-for-power-supplies
- The power supply unit must not exceed a maximum output current of 3.5A.
- Only power supply units that provide a regulated DC voltage between 15V and 19V can be used.
- The power supply unit 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 (e.g. 3-conductor track from Märklin) is not permitted. This will destroy the YD7001-E.
- It is essential to ensure that the wiring cross-section of the individual connections is sufficient.
- The connection terminals are designed for a cross-section of 0.75 mm².
- Connection work must always be carried out in a de-energised state.
- The YD7001-E must never be installed near strong heat sources, such as radiators or locations exposed to direct sunlight. Therefore, install the YD7001-E in a location with sufficient ventilation to dissipate the waste heat.
- The YD7001-E was developed exclusively for dry indoor areas. Therefore, do not operate the YD7001-E in environments with large fluctuations in temperature and humidity or outdoors.
- Do not attempt to open the YD7001-E. Improper actions can lead to the destruction of the YD7001-E.

## Hardware overview



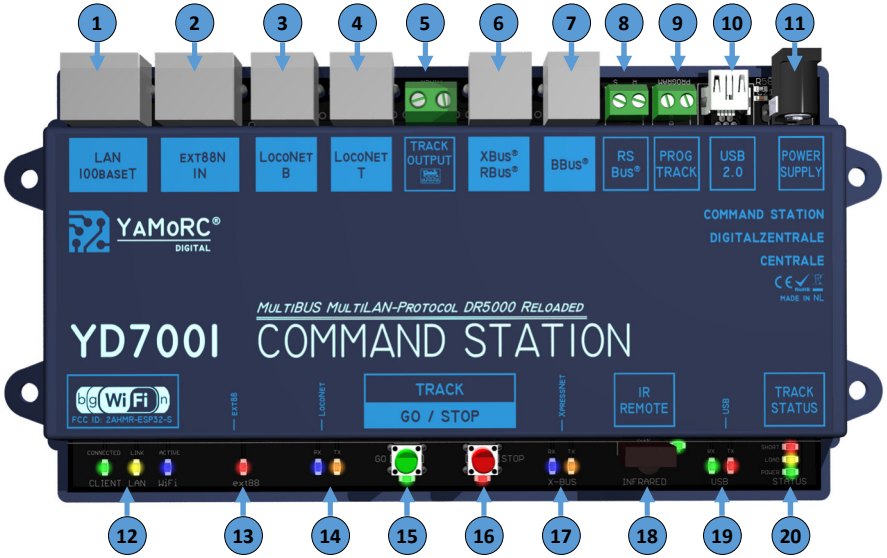

| | | |
|---|---|---|
| 1 | **Lan 100 Baset** | LAN connection RJ45 (100Mbit) |
| 2 | **Ext88N N** | S88 and ES Link connection |
| 3 | **Loconet® B** | Loconet® booster connection<br>*(Loconet® can be loaded with a maximum of 750mA, the currents for Loconet® B and T add up)* |
| 4 | **Loconet® T** | Loconet® feedback unit and hand controller<br>*(Loconet® can be loaded with a maximum of 750mA, the currents for Loconet® B and T add up)* |
| 5 | **Track Out** | Main track connection<br>maximum loadable with 3A<br>*(Output voltage from the Track Out can be influenced by the VDC power supply* |
| 6 | **XBus® RBus®** | XpressNet® sensors and manual controllers (e.g. Roco® Multimaus, Lenz®, etc.) or RBus® sensors (Roco®, Digikeijs®, etc.) |
| 7 | **BBus®** | Roco® Booster Bus connection |
| 8 | **RS Bus®** | RS feedback connection (e.g. Lenz®) |
| 9 | **Prog Track** | Programming track connection<br>maximum load 750mA |
| 10 | **USB 2.0** | Mini USB 2.0 connection |
| 11 | **Power Supply** | Connection VDC (direct DC voltage) Power supply unit<br>5.5x2.1mm plug connector<br>Min: 15VDC<br>Max: 19VDC<br>Max: 3.5A<br><br>The power supply unit used must comply with protection class 2. Failure to do so may result in serious damage to the YD7001-E. The power supply unit must be labelled with this symbol.  |

# Hardware overview




| | | | |
|---|---|---|---|
| 12 | **WiFi** | | |
| | **Green LED** Connected Client | — | **Green LED off,** no client connected |
| | | **** | **Green LED flashes irregularly,** indicates that a client is connected and data exchange is taking place |
| | **Orange LED** Link Lan | — | **Orange LED off**, no connection via a network cable. |
| | | **** | **Orange LED flashes irregularly**, indicates that the YD7001-E is connected with a network cable to a router, for example, and is exchanging data. |
| | **Blue LED** Active WiFi | — | **Blue LED off**, WiFi deactivated |
| | | **** | **Blue LED flashes**, YD7001-E WLAN is active |
| 13 | **Ext88 Status** | | |
| | **Red LED** | **** | **Red LED flashes** with activity via S88 or ES-Link |
| 14 | **Loconet®** | | Loconet® Activity indicator |
| | **Blue LED RX** | **** | **Blue LED** RX Data is received by the Loconet® |
| | **Orange LED TX** | **** | **Orange** LED TX Data is sent via the Loconet® |
| 15 | **Go Button** | | **Go button** to release the track voltage |
| | **Green LED** | — | **Green LED** off, track voltage OFF |
| | | * | **Green LED lights up**, track voltage ON (Track Out) |
| | | **** | **Green LED flashes**, emergency stop has been triggered (track voltage ON) |
| 16 | **Stop Button** | | **Stop button** triggers an emergency stop when pressed once. All travelling locos are stopped, track voltage remains ON. If the button is pressed twice in quick succession (double-click), an emergency stop is triggered and the track voltage is switched off. |
| | **Red LED** | — | **Red LED off,** no stop, emergency stop, emergency off or short circuit detected |
| | | * | **Red LED lights up**, track voltage OFF (Track OUT) |
| | | **** | **Red LED flashes**, short circuit |
| 17 | **X-Bus®** | | XpressNet® Activity indicator |
| | **Blue LED RX** | **** | **Blue LED RX** Data is received from the XpressNet® |
| | **Orange LED TX** | **** | **Orange LED** TX Data is sent via the XpressNet® |
| 18 | **IR-receiver** | | IR receiver (Piko® Fern®, etc.) |
| | **Green LED** | * | **Green LED flashes**, valid signal received at IR receiver |

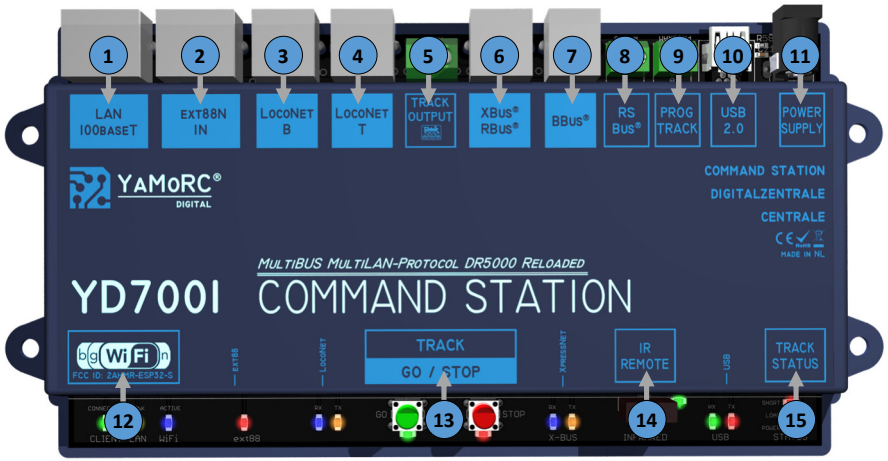
# Hardware overview




| | | | |
|---|---|---|---|
| **19** | **USB** | | USB Activity indicator |
| | **Green LED** | **** | **Green LED** RX, data is being received via USB |
| | **Red LED** | **** | **Red LED** TX, data is sent via USB |
| **20** | **Track Status** | | |
| | **Red LED** Short | **** | **Red LED flashes**, short circuit detected at Track Out |
| | **Yellow LED** Load | * | **Yellow LED** lights up, load on Track Out below 90% *(LED becomes brighter under load)* |
| | | **** | Yellow LED flashes, load on Track Out greater than 90% |
| | **Green LED** Power | — | **Green LED** off, no voltage present at Power |
| | | **** | **Green LED** flashes as soon as supply voltage is present |

## Overview of the YD7001-E configuration menu

The individual configuration menus of the YD7001-E are called up simply by clicking on the individual buttons. Further menu items are called up by clicking on the individual tabs. A brief overview of the menu structure is shown here.




1) **LAN 100Base** —>
   >**Lan** Basic settings (Activate protocols, etc.)
   >**Expert** settings (IP addresses, subnet, port settings, etc.)
   >**Web**

2) **Ext88N** —>
   **>ES-Link** Call up the configuration
   **>S88 Module** configuration (number of modules, 1st address feedback range, start delay, etc.)'
   **>Eingänge** (Configuration of the YD6016ES-xx)
   >**s88 Bus Monitor** (Feedback monitor of the connected S88 modules)

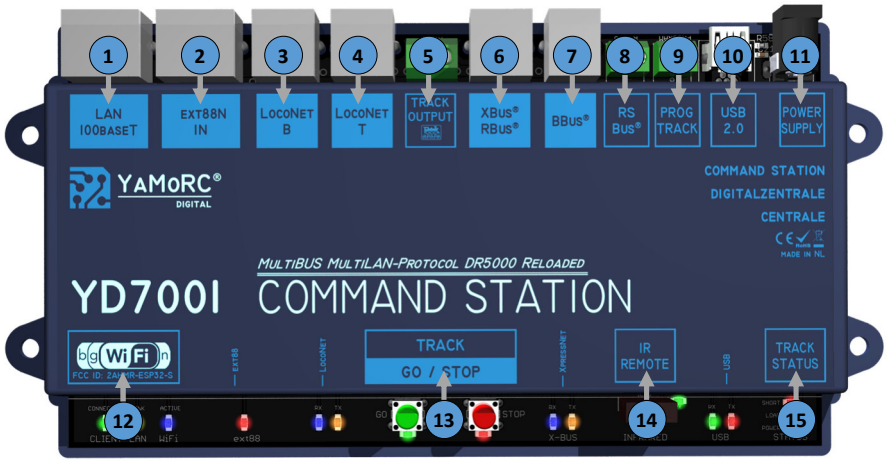
3) **Loconet® B** —>
   **>LNCV** Programming
   **>Feedback monitor** for all feedback devices
   **>Booster** (Display of all YD703 boosters)
   **>Settings** (Railcom® rerail sens direction)
   **>Expert** (Normally no settings are necessary here).

4) **Loconet® T** —>
   **>LNCV** Programming
   **>Feedback monitor** for all feedback devices
   **>Settings** (Railcom® rerail sens direction)
   **>Expert** (Normally no settings are necessary here).

5) **Track Out** —>
   **>Track** (Railcom® on/off, maximum track current, short-circuit delay, etc.)
   **>Track Status** (temperature of the track amplifier, track current, track voltage)
   **>Locos** (highest short address, standard speed steps, assignment of speed steps for certain locomotives)
   **>Slots** (Loconet slot display)
   **>Turnout** (selection whether switching according to RCN-213 or MultiMaus®, minimum and maximum switching time of the accessory addresses)

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5) **Track Out** —>

**>Expert**

**>Track** (Railcom® Cut Out Polarity, Railcom Auto Cut Off, etc.)

**>Turnout** (Sending RCN-217 accessory addresses, LDT points decoder special option, number of repetitions of accessory commands)

**>DCC Pakte** (number of repetitions of the DCC commands to the track)

6) **XBus®/RBus®** —>

**>Settings** (Xpressnet® off/on, software version Xpressnet®, feedback base address, RBus on/off, first feedback contact, etc.)

**>RBus® Monitor** (feedback monitor of the connected RBus® modules)

>**RBus® Modul** Programming (wizard for assigning the module address feedback modules on the RBus®)

**>Expert** (send locomotive info broadcast, start of feedback numbers Xpressnet®, RBus® query time)

7) **BBus®** —>

**>BBus® Settings** (Short circuit delay BBus® Booster)

8) **RB-Bus®** —>

**>Settings** (RS-Bus® scanning on/off, LDT® timing on/off)

**>RS-Bus® monitor (feedback monitor of the connected RS-Bus® modules)**

**>RB-Bus® Module programming** (wizard for assigning the module address feedback modules on the R-Bus®)

9) **Prog.Track** —>

**>CV Programming** (mode selection, reading and writing CV values)

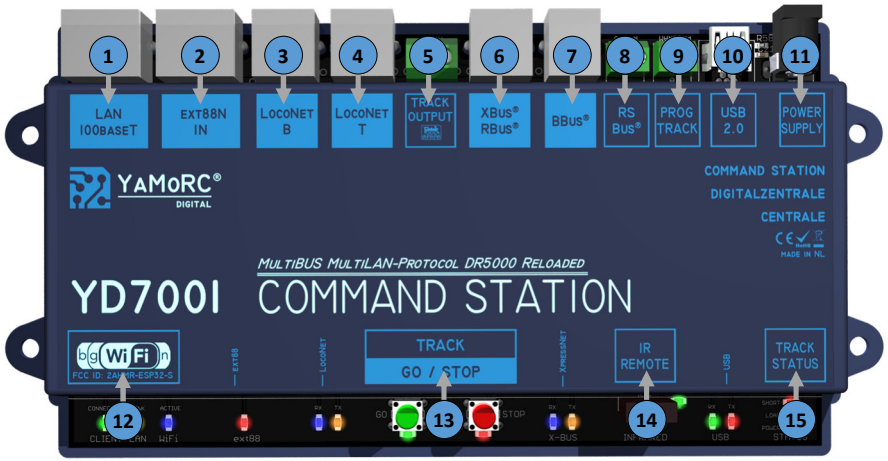
**>Test drive** (Control panel for test driving a locomotive)

**>Settings (Programming track settings)**

**>Expert** (Advanced settings programming track, normally no settings are necessary here)

## Overview of the YD7001-E configuration menu

The individual configuration menus of the YD7001-E are called up simply by clicking on the individual buttons. Further menu items are called up by clicking on the individual tabs. A brief overview of the menu structure is shown here.




10) **USB 2.0** —>

**>USB** Properties (USB interfaces, connection, update firmware, restore factory settings)

11) **PowerSupply** —>

>Information (energy status, track voltage)

12) **WiFi** —>

**>Basic settings** (SSID, Password)

**>Expert** (Wlan, DHCP, YD9100 info, IP settings, YD9100 firmware update, Restore factory settings, Restart YD9100)

**>Web**

13) **Track Go/Stop** —>

**>Control** (YD7001 connection, log window on/off, language, call up speed controller, call up control panel, export/import settings, temperature info,)

**>Settings** (save and land locomotive data, track voltage on after restart, switch-on delay, function of the stop button)

**>Script**

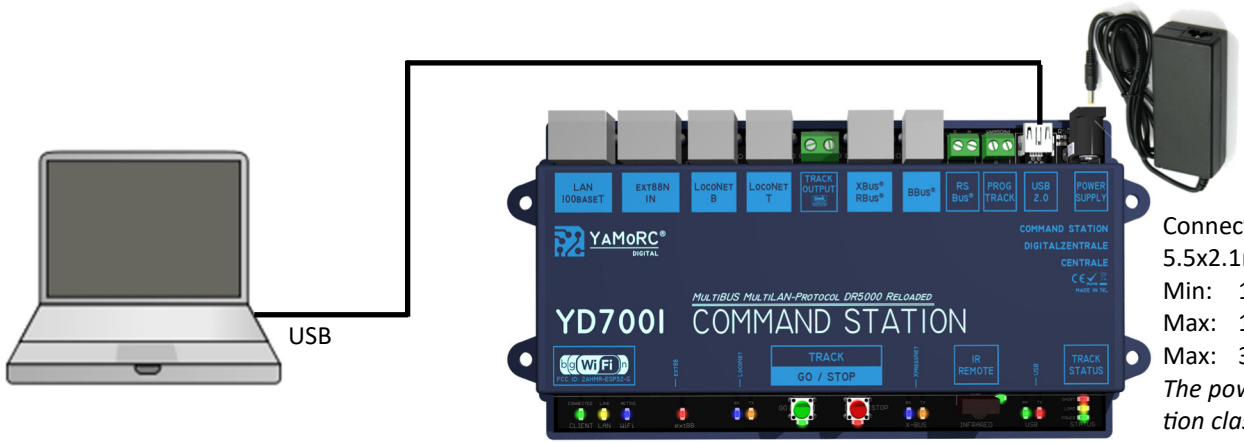
14) **IR Remote** —>

**IR Properties** (IR sensor on/off, define functions)

15) **Track Status** —>

**Track Status Properties** (information on temperature, track voltage, utilisation)

## Connect the YD7001-E to the power supply unit and the PC via USB

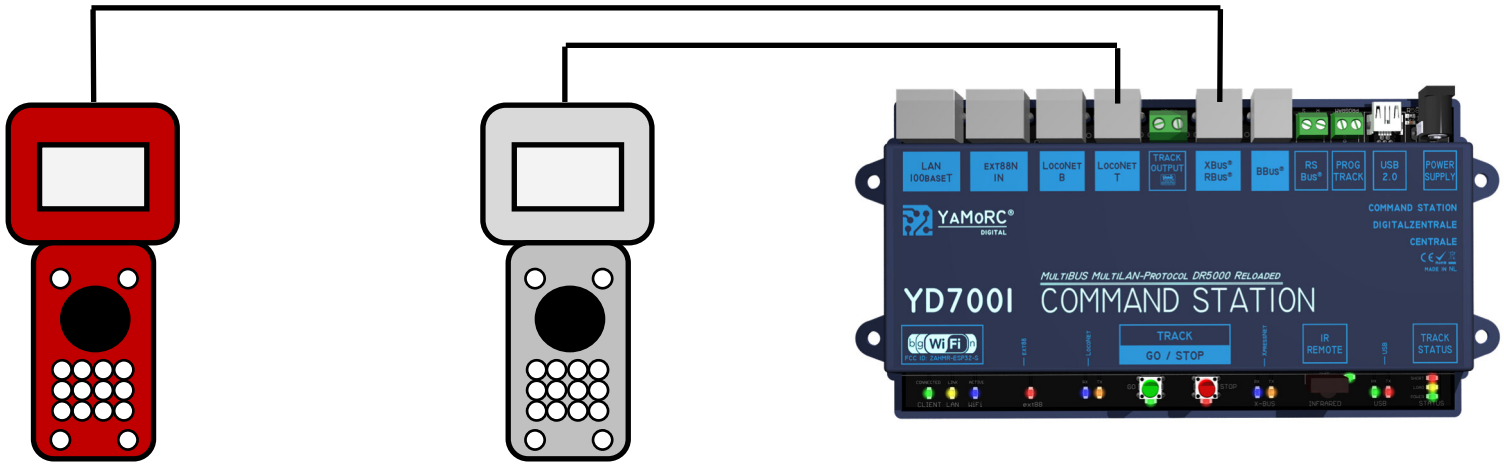



Power supply

Connection VDC Power supply unit
5.5x2.1mm barrel connector
Min: 15VDC
Max: 19VDC
Max: 3,5A
*The power supply unit used must comply with protection class 2.*
*Failure to do so may result in serious damage to the YD7001-E. The power supply unit must be labelled with this symbol.*

## Connection example hand controller

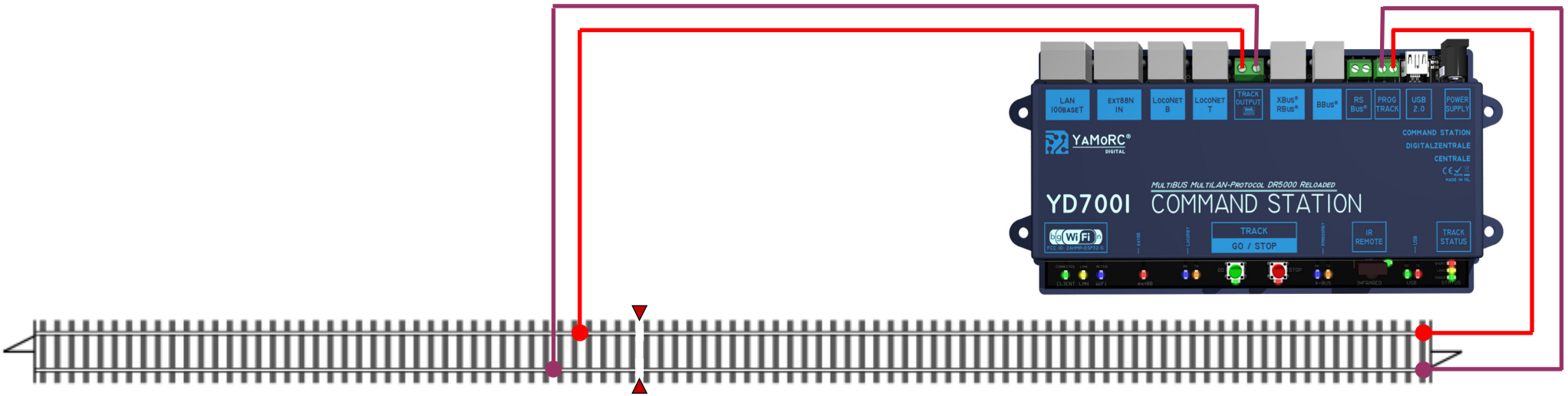
All common handheld controllers for Loconet® (e.g. Uhlenbrock®, Piko®, Digitrax®, etc.) and Xpressnet® (e.g. Lenz®, Roco®, etc.) can be operated directly on the YD7001-E. However, it is essential to ensure that the sockets for Loconet® and Xpressnet® are not mixed up. This will result in damage to the YD7001-E or the hand controller.




Lenz®, Roco®, others
Xpressnet® hand controller

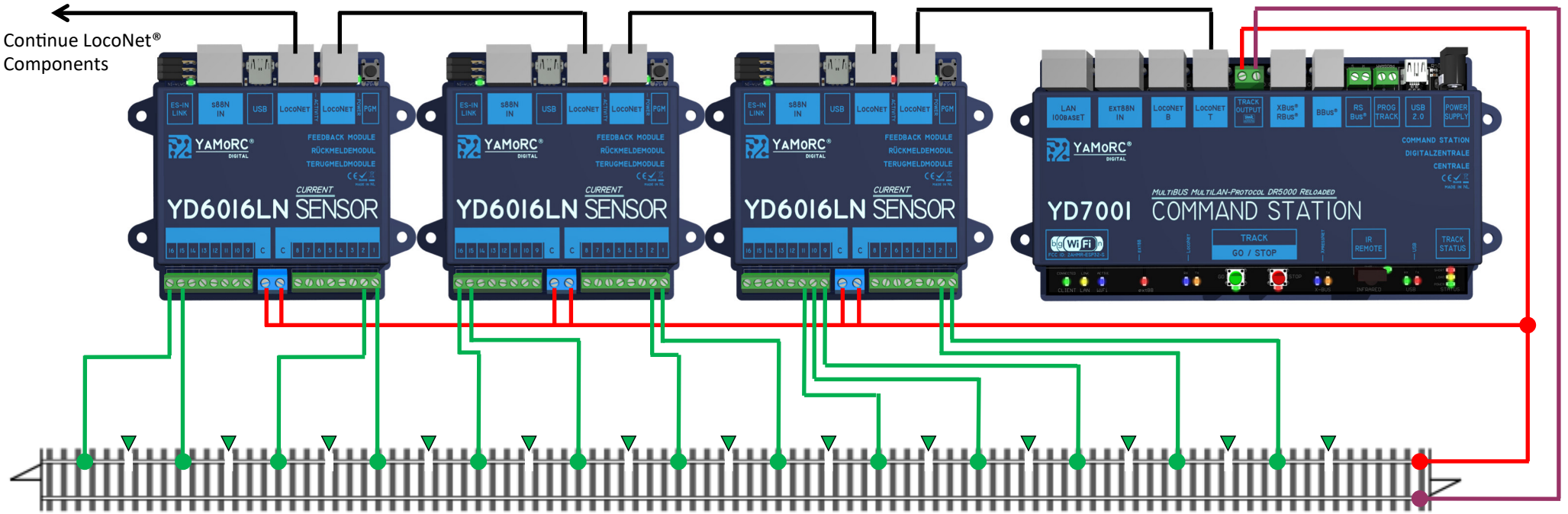
Uhlenbrock®, Digitrax®,
other Loconet®
hand controllers

# Main track or programming track connection

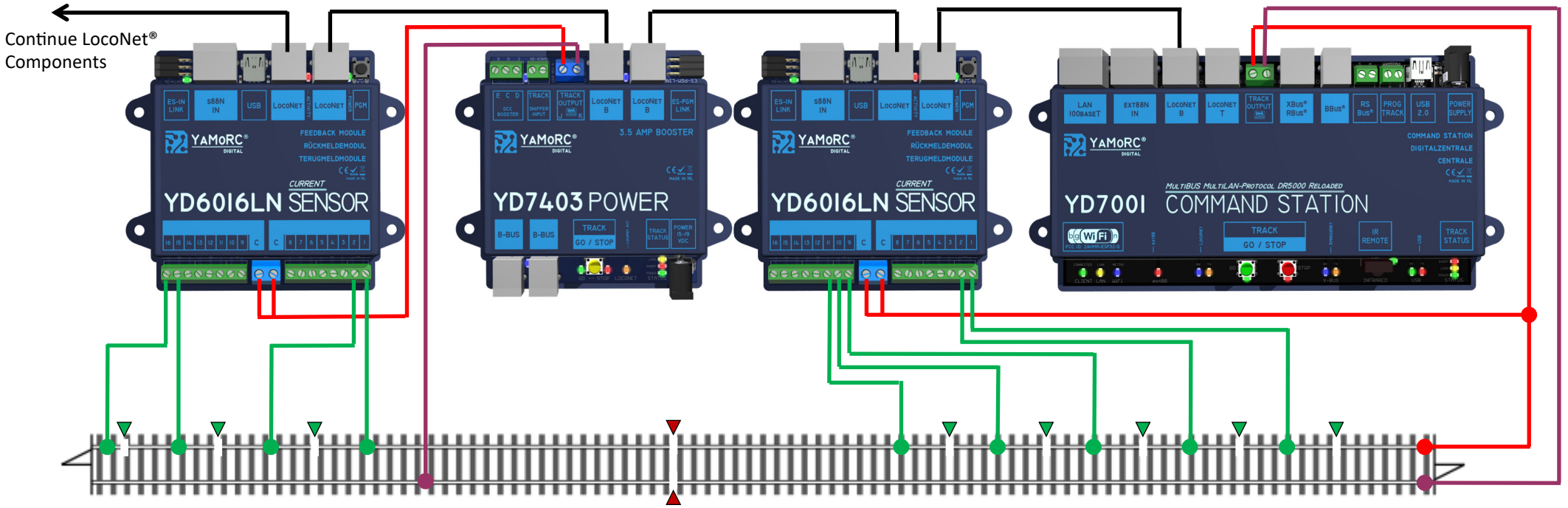


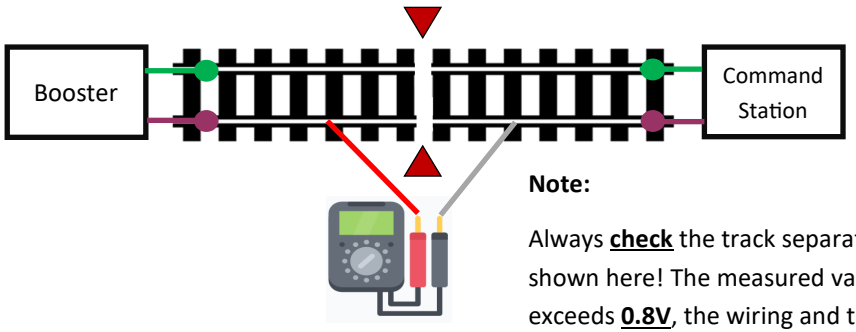

Track separation on both sides between
main track and programming track

## Example of connecting the feedback unit to the 2-wire track and LocoNet® T



## Connection example of the YD6016LN-CS feedback unit on the 2-wire track, with YD7403 booster via LocoNet® B




**Note:**

Always **check** the track separation between the control **centre and booster** as shown here! The measured value displayed must not exceed 0.8 volts! If the voltage exceeds **0.8V**, the wiring and the voltage setting on the power supply unit must be checked.

**Attention!**
All connection work must always be carried out in a de-energised state. Disconnect the power supply from the mains and switch off the control centre!

# 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 by 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