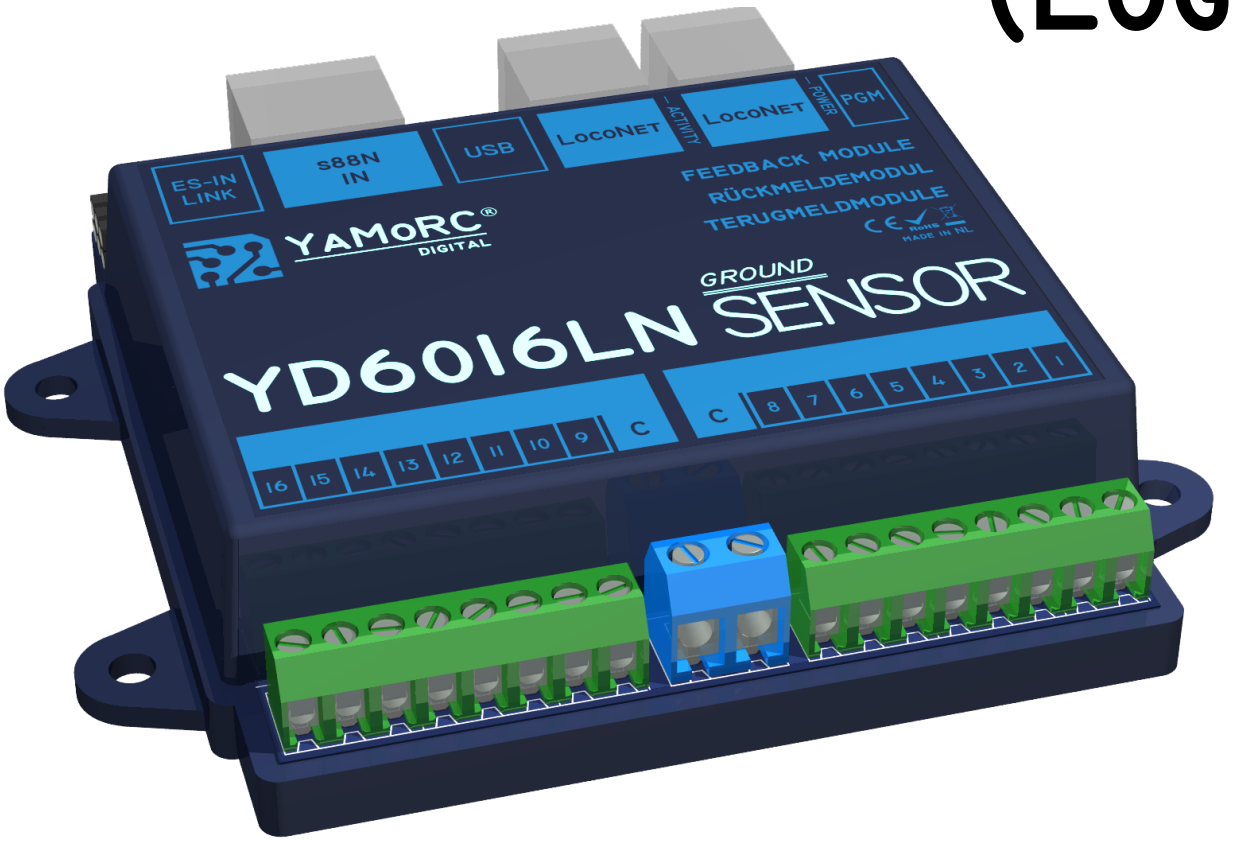
YAMORC®
DIGITAL

YD6016ES Ground Sensor

16-fold feedback module (Logic indicator) Quick Start

(2025-04-10)



Designed by Karst Drenth
Made in Germany
Assembled in NL

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Description

- The **YD6016ES-GND** is the standard s88N feedback module from YaMoRC. Connections are made via normal RJ45 sockets and standard Ethernet patch cables.
- The **YD6016ES-GND** has sixteen feedback inputs. These are divided into two groups with eight inputs. The feedback inputs of the YD6016ES-GND operate according to the current sensor principle and thus detect a consumer. The sensitivity of the feedback inputs is 1 mA current consumption.
- The **YD6016ES-GND** has a capacitive **input filter** at each feedback input. This filter suppresses noise (antenna effect) on long line paths and sections. This effectively suppresses false alarms.
- Via the "ES-IN Link" connection, it is possible to connect another four YD6016ES-GND modules to each other. In addition, the firmware of the YD6016ES-GND can be updated via "ES-Link".
- Via the "**s88N IN**" connection, the **YD6016ES-GND** can be extended by another four "s88N" modules with 16 feedback inputs.
  Attention! Joint use of "ES-OUT Link" and "s88N-OUT" or "ES-IN Link" and "s88N-IN" on the same module is not permitted.
- **Attention!** When using "s88N", please note that the YD6016ES-GND is designed for a **supply voltage of 5 V** at the "s88" bus.
  Operating the YD6016ES-GND on command stations that provide a supply voltage of **12 V** at the "s88N master" **(e.g. Märklin® CS3+)** will therefore destroy the YD6016ES-GND.

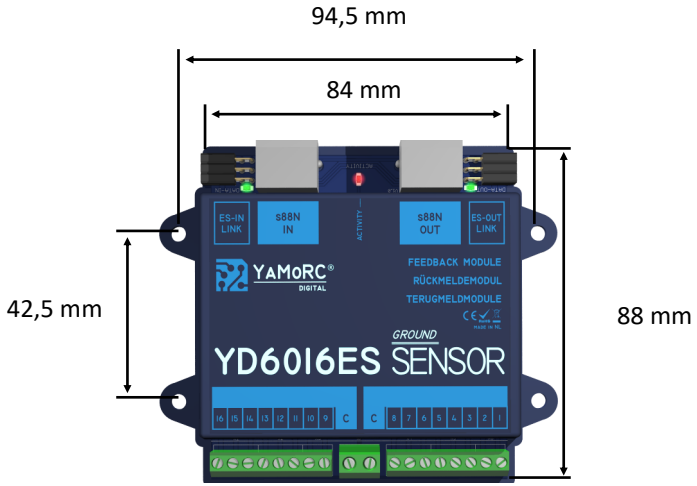
Technical Data:

Number of feedback inputs	16 inputs (grouped in two groups of 8)
Housing Dimensions	84 mm x 88 mm x 22 mm
Distance Between Holes	94,5 mm, 42,5 mm
s88	**Max. 5V** supply voltage

Mounting

The YD6016ES-GND is mounted via the four mounting holes on the side of the housing.

Dimensional Drawing



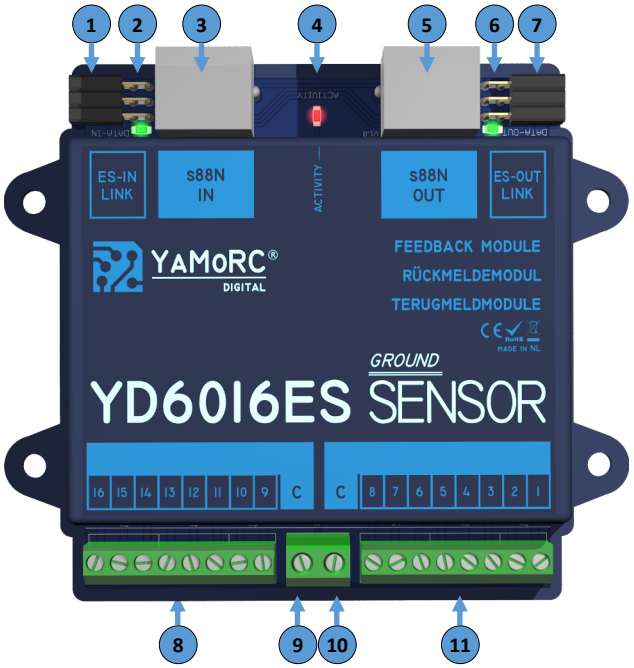
Important Notes (Including Health & Safety):

- The YD6016ES-GND is intended exclusively for operation on an electric model railway.
- The YD6016ES-GND is **not** a toy and is therefore **not** suitable for children under 14 years of age.
- **Never** leave the YD6016ES-GND operating without your presence. Please disconnect the product before leaving it unattended.
- 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 YD6016ES-GND . The voltage sources must be marked with this symbol (illustrated below).

  Further information on the Protection Class 2 can be found here: https://www.xppower.com/resources/blog/iec-protection-classes-for-power supplies
- Direct voltage sources **(DC)** must not exceed a maximum power of **60W**.
- AC voltage sources **(AC)** 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 ground connection of different voltage sources or circuits is **not** permitted. This will destroy the YD6016.
- It is essential to ensure a sufficient wiring cross-section of the individual connections.
- The connection terminals for "C" are designed for a cross-section of 0.75 mm².
  All other connection terminals are designed for a cross-section of 0.5 mm².
- Connection work must always be carried out in a de-energized state. Disconnect or switch off LocoNet® and power supply from the control center via "C".
- The YD6016ES-GND must **never** be installed near sources of intense heat, such as radiators or places exposed to direct sunlight. Therefore, install the YD6016ES-GND in a place with sufficient ventilation to be able to dissipate the waste heat.
- The YD6016ES-GND is designed for dry indoor use only. Therefore, do **not** operate the YD6016ES-GND outdoors or in environments with extreme fluctuations in temperature and humidity.
- Do **not** attempt to open the YD6016. Improperly performed actions can lead to the destruction of the YD6016.

Product/Hardware Overview

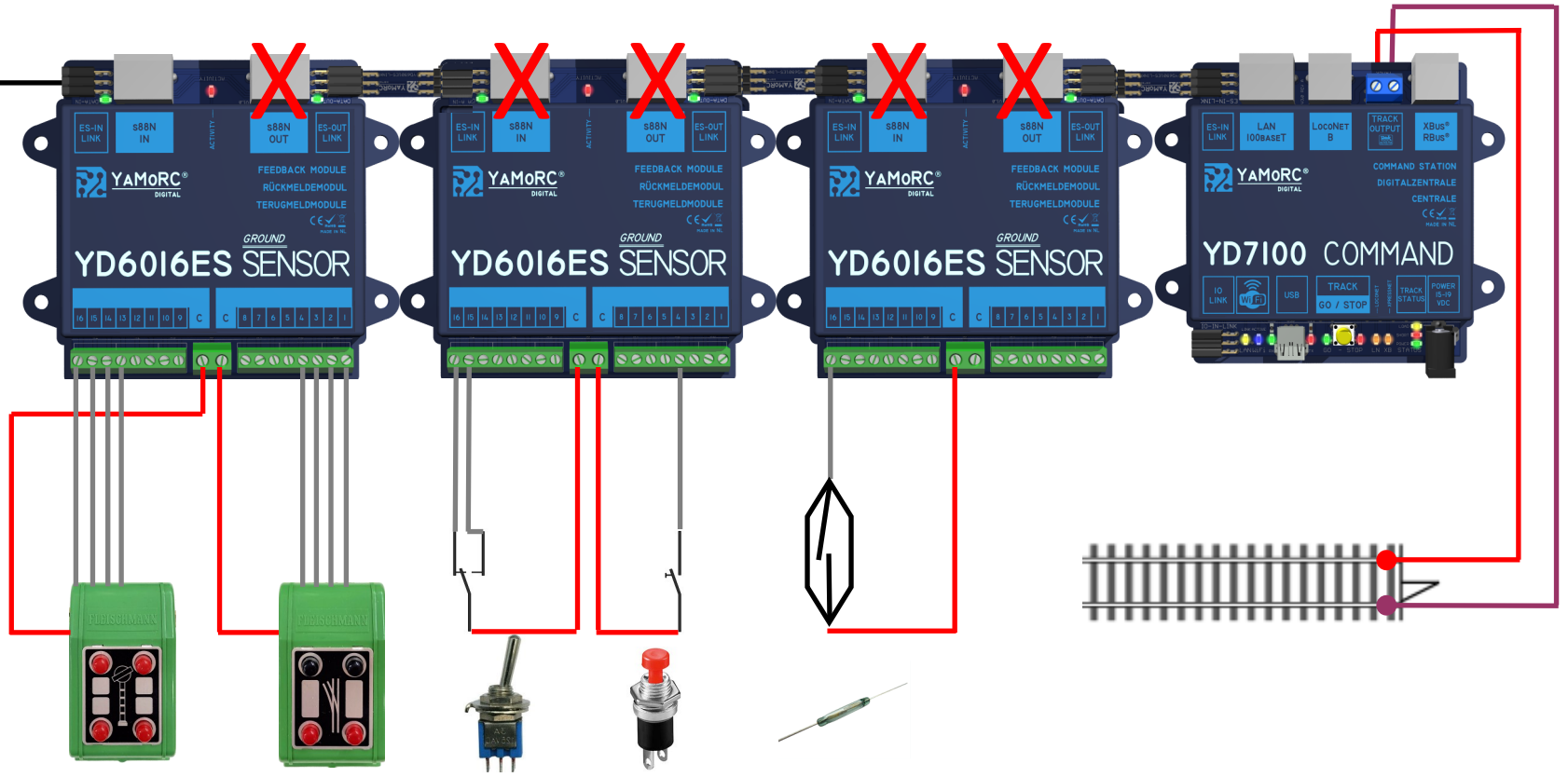


1	**ES-IN Link**	Connection for further modules with "ES-Link". **Attention!** If the "ES-IN Link" is used to connect further feedback modules, the "s88N IN" must not be used at the same time.
2	**Green LED**	display Programming process via "ES-IN Link" running
3	**s88N IN Connection (5V supply voltage)**	At this connection four more "s88N" standard feedback modules with 16 inputs can be connected to this port. **Attention!** If the "s88N-IN" is used for the connection of further feedback modules, the "ES-IN Link" must not be used at the same time be used at the same time.
4	**Red LED**	Load indication of the feedback devices.

5	**s88N OUT Connection (5V supply voltage)**	At this connection four more s88N standard feedback modules with 16 inputs can be connected to this port. **Attention!** If the "s88-OUT" is used for the connection of further mo dules, the "ES-OUT Link" must not be used at the same time. be used at the same time.
6	**Green LED**	**Display Programming process via "ES-Link" running**
7	**ES-OUT Link**	Connection for further modules with "ES-Link". **Attention!** If the "ES-OUT Link" is used for the connection of further feedback modules, the "s88N OUT" must not be used at the same time.
8	**9** : : : **16**	Connection feedback input no. 9 (2st feedback group) Connection feedback input no. 16
9	**C**	Common connection 2st feedback group
10	**C**	Common connection 1nd feedback group
11	**1** : : : **8**	Connection feedback input no. 1 (2st feedback group) Connection feedback input no. 8

Connection example of the feedback devices for pushbuttons, switches, reed contacts, etc. YD6016ES-GND via "ES-Link

Further feedback modules via ES-Link.



Fleischmann® Control panel | Switch (NOC) | Button (NO) | Reed contact

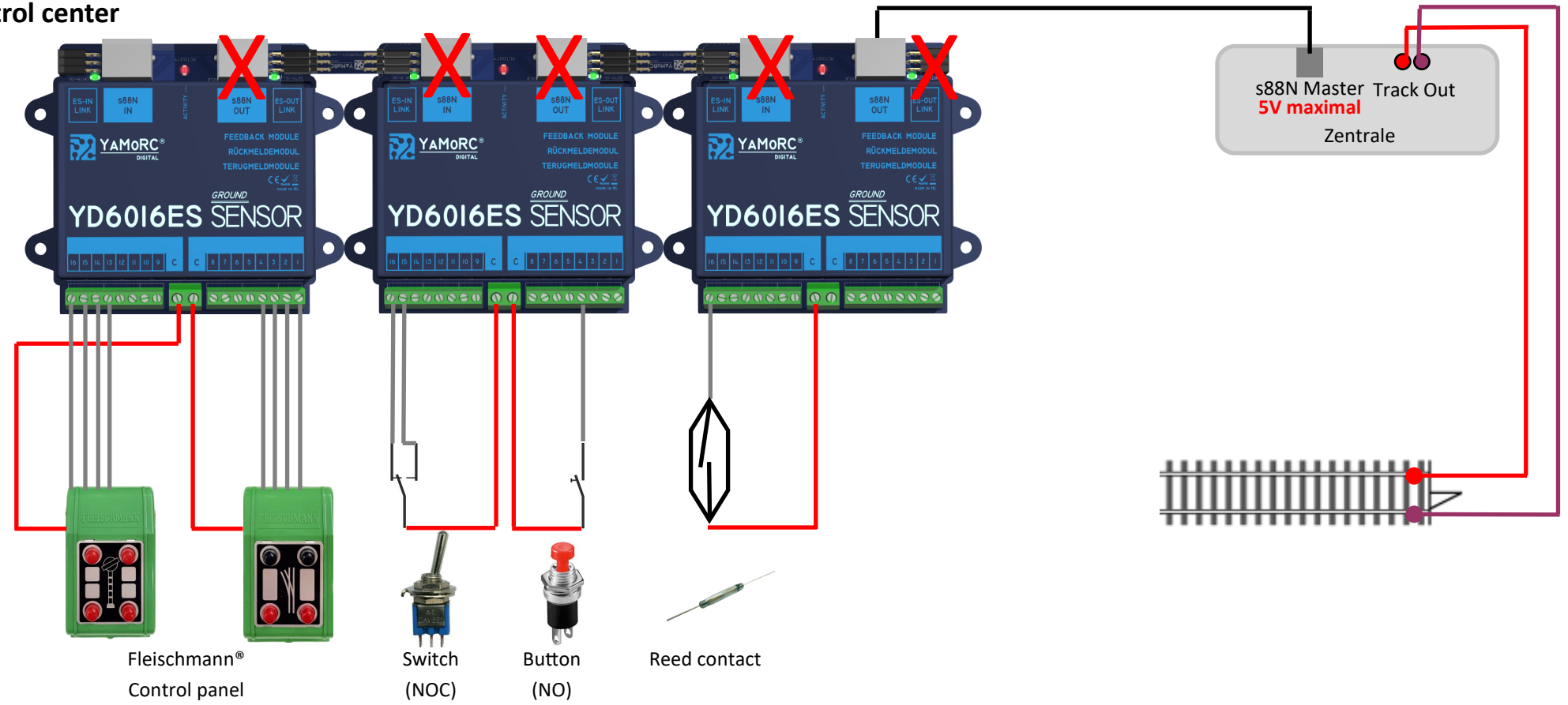
Maximum expansion: 96 feedback modules, consisting of five feedback modules with 16 inputs each in the entire "ES-Link" string.

Attention! A common use of "ES-OUT Link" and "s88N-OUT" or "ES-IN Link" and "s88N-IN" at the same module is not allowed.

Attention! When using "s88N", please note that the YD6016ES-GND is designed for a **supply voltage of 5 V** at the "s88" bus.
Operating the YD6016ES-GND on command stations that provide a supply voltage of **12 V** at the "s88N master" **(e.g. Märklin® CS3+)** will therefore destroy the YD6016ES-GND.

Attention!
All connection work on the YD6016ES-GND must always be performed in a de-energized state. Disconnect the power supply from the mains and switch off!

Connection example of the feedback devices for buttons, switches, reed contacts etc. Connection via s88N to an s88N capable control center



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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 the repair or replacement delivery. Warranty claims can only be made to your dealer, enclosing any warranty certificate, proof of purchase and a description of the fault. Products sent directly to YaMoRC will neither be treated nor returned free of charge.

DrenthDesign & Consulting B.V.
Glazeniershorst 209
NL-7328 TJ APELDOORN
Liability: DrenthDesign & Consulting B.V.
Phone: +31643392605
E-Mail: ddc@yamorc.com
Directors: KarstDrenth
Trade register: 72184728
VAT No/Tax ID: NL-859019901B01