

Line/Backbone Coupler
N 140 LCP3000EZ
Data Sheet



product GUIDE



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Line/Backbone Coupler N 140



Product and Applications Description

The line/backbone coupler N 140 establishes a data link between two separate bus lines and galvanically separates these bus lines. Thus, each bus line can operate independently from the other lines in their local operating scope. The line/backbone coupler N 140 provides a filtering table for allowing specific bus telegrams to pass from one line to the other while blocking off all other telegrams. In

order to reduce bus traffic, only those telegrams are passed on to other lines that address devices on the respective lines. The filtering table is created by the ETS (EIB Tool Software) automatically on commissioning the system (when loading the line/backbone couplers). With ETS 2, the filtering table can also be adjusted manually. The connection to the two bus lines is established as follows:

- a) secondary line – via pressure contact when snapped onto DIN and data rails
- b) primary line – via bus connection block

The line/backbone coupler N 140 combines lines with the main line to a zone. The backbone coupler combines zones with the primary backbone line. Both types of couplers link primary lines and secondary lines as ruled by their filtering tables and only pass on group telegrams if their destination address is recorded in the filtering

table. As there are no differences in hardware between the line and the backbone coupler, they were given the same order number. The coupler is assigned its task (line or backbone coupler) by the ETS along with its physical address. For both versions the following definitions apply:

Coupler	Primary line	Secondary line
Backbone coupler	Backbone line	Main line 1- 15
Line coupler	Main line 1- 15	Line 1- 12

Application Program

Coupler Version 1.1

- allows check of filter table
- allows to block off group telegrams
- allows passing on and blocking of main groups 14/15
- behavior on errors can be specified
- retries on transmission error can be specified (ETS 1.36 or higher)
- telegram acknowledgement

Technical Specifications

RATED VOLTAGE

- Primary line: 24V DC (21...30V DC)
- Secondary line: 24V DC (21...30V DC)

POWER INPUT

- From primary line: 15 mW
- From secondary line: 200 mW

CONTROL ELEMENTS

1 learning button for switching between normal operating mode and addressing mode

DISPLAY ELEMENTS

- 1 yellow LED for bus load on the secondary line
- 1 green LED for 'ready' state
- 1 yellow LED for bus load on the primary line
- 1 red LED for controlling bus voltage and displaying mode, selected by the learning button

CONNECTIONS

- Primary line: screwless bus connection blocks AWG #18-20 solid Cu
- Secondary line: pressure contacts on data rail

PHYSICAL SPECIFICATIONS

- Polymer casing
- DIN-rail mounted device, width: 4 SU (1 Su = 18mm)
- Weight: approx. 206 g (8oz)
- Installation: rapid mounting on DIN EN 50022-35 x 7,5 rail

ELECTROMAGNETIC COMPATIBILITY

Complies with Part 15 of the FCC rules pursuant to the limits for a Class A digital device.

ENVIRONMENTAL SPECIFICATIONS

- Ambient temperature operating: 23...113°F(-5...+45°C)
- Maximum ambient temperature range: -13...158°F (-25...+70°C)
- Relative humidity (non-condensing): 5% to 93%

LISTINGS AND CERTIFICATIONS

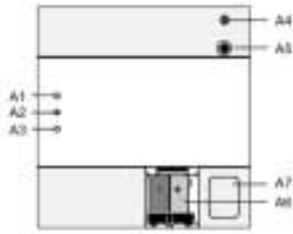
UL listed (E173 174)
UL 916, Energy Management Equipment Accessory

CSA certified
(pending)

CE marked
complies with EMC regulations (residential and non-residential buildings), and low voltage regulations

EIB certified

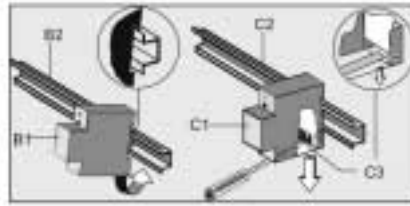
Location and Function of the Display and Control Elements



- A1** Yellow LED for data traffic on the secondary bus line
- A2** Green LED for 'ready'
- A3** Yellow LED for data traffic on the primary bus line
- A4** Red LED for indicating normal operating mode (LED off) and addressing mode (LED on); upon receiving the physical address the device automatically returns to normal operating mode
- A5** Learning button for switching between normal operating mode and addressing mode
- A6** Bus connection block for primary line (e.g. main line)
- A7** Label for noting the physical address

Installation Instructions

The device may be used for permanent interior installations in dry locations within distribution boards.



Mounting

General description

The DIN-rail device can be installed in the *instabus* EIB lighting control panel, to surface or flush mounted, and snapped onto the DIN-rail EN 50022-35 x 7,5 that has a data rail attached to it.

The connection to the bus line is established by clicking the device onto the DIN-rail (with glued-in data rail). Take care that the type plates of all devices on a DIN-rail can be read in the same direction, guaranteeing the devices are polarized correctly.

Mounting the Line/Backbone Coupler N 140 to a DIN-rail

- Slide the DIN-rail device (B1) onto the DIN-rail (B2) and swivel the DIN-rail device until the slide clicks into place audibly.

Dismounting DIN-rail devices

- Press down the slide (C3) with a screwdriver and swivel the DIN-rail device (C1) from the DIN-rail (C2).

Connecting bus cables

- The bus connection block (E1) requires AWG 18 solid Cu e.g. Belden # 6230 FE.
- Remove approx. 3/16" (5mm) of insulation from the conductor (E1.4) and plug it into the bus connection block (E1) (red = +, black = -).

Slipping off bus connection blocks

- The bus connection block (D2) consists of two components (D2.1 and D2.2) with four terminal contacts each. Take care not to damage the two test sockets (D2.3) by accidentally connecting them to the bus cable or with the screw driver (e.g. when attempting to unplug the bus connection block).
- Carefully put the screw driver to the wire inserting slit of the bus connection block's grey component (D2.2) and pull the bus connection block (D2) from the device (D1).

Note: Don't try to remove the bus connection block from the bottom side. There is a risk of shorting out the device



Slipping on bus connection blocks

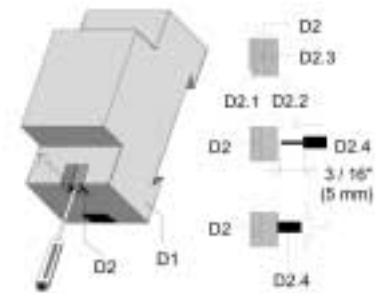
- Slip the bus connection block onto the guide slot
- Press the bus connection block (D2) down to the stop
- Stick on the bus connection block cover

Connecting bus cables

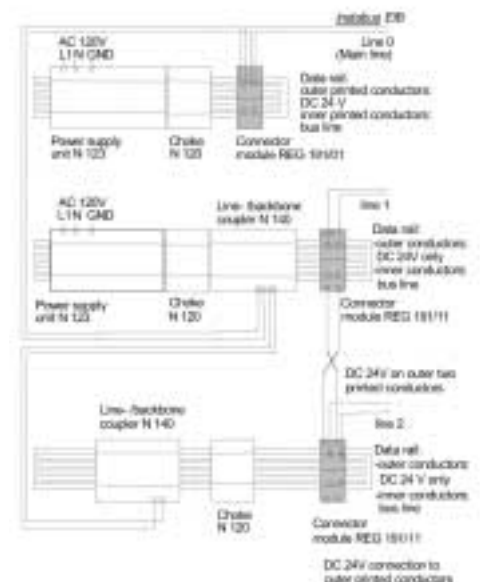
The bus connection block (D2) can be used with single core conductors Ø 0,6...0,8 mm.

Disconnecting bus cables

Unplug the bus connection block (D2) and remove the bus cable conductor (D2.4) while simultaneously wiggling it.



Typical circuit



**Line/Backbone Coupler
N 140**

5WG1 140-1AB03

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