- 3 isolated function relays: outputs are isolated from decoder function inputs
- Used to interface decoders with sound systems, lighting, signals, switch machines or other on/off devices that require more current than the decoder can supply
- Each function relay operates a maximum load of 1A
- All connections are designed as screw terminals
- Compatible with NMRA DCC decoders of all brands.
- Size: L 1.6" x W 1.22" x H .47"
  L 40mm x W 31mm x H 12mm

Information
LF200

Art. No. 10201

DIGITAL plus

June, 1997

The features of the LF200 Function Module

The function module LF200 adds functionality to any locomotive decoder (such as an LE230) by providing more current to control functions and by isolating the function from the decoder. With the LF200 module you can turn high current items such as smoke units or devices that require isolation such as sound systems, on and off digitally.

Installation considerations:

The function module must be isolated when installed, that is, its components must not under any circumstances touch metal parts of frame or shell of the locomotive. In that case there will be a short circuit and both the function module, as well as the decoder connected to the LF200, will be destroyed!

The LF200 has 2 attachment holes (3 mm [approximately 1/8 inch] diameter) to help you mount it in a suitable space in the locomotive. Use suitable spacers, so that the components on the back of the LF200 do not contact any electrically conductive parts of the locomotive. Do not over-tighten the screws you use, to prevent the circuit board from warping. Warping could cause hairline fractures in the circuits traces, leading to function disturbances.

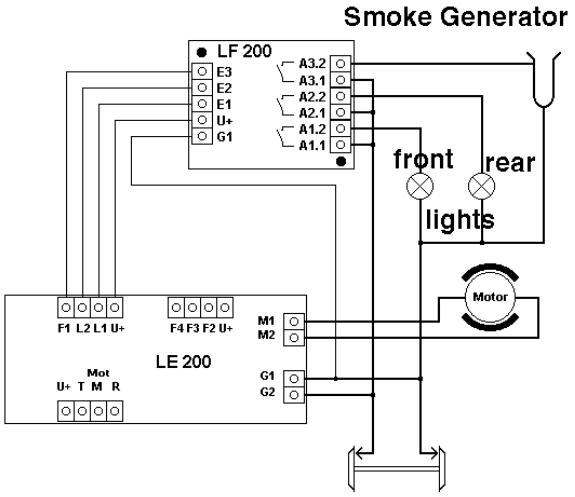

Figure 1: Connecting functions to an LF200

Connecting the LF200 to a LE200/230

On the LF200 there are 2 rows of terminals:

E1-3, U+ and G1, as well as A1.1 -A3.2 ('E' for input, 'A' for output)

With terminal row E1-3, U+ and G1, the LF200 is connected to LE200 as shown in figure 1.

Wire terminal row E1-3, U+ and G1 only to the designated terminals on LE200. Do not make any connections to the motor, other terminals of function module LF200 or the locomotive frame.

Connecting extra functions to the LF200

Each terminal pair A1.1/A1.2, A2.1/A2.2, A3.1/3.2 provides one digitally controlled isolated working contact for use. With this contact you can turn functions of your choice inside a locomotive on and off.

The maximum load of each contact is 1 A.

If terminal E1 of LF200 is connected to terminal L1 of LE200 and terminal E2 of LF200 with terminal L2 of LE200, and the light function is activated, then when the direction selected is “forward”, the contact at A1.1/1.2 is closed; on direction “reverse”, the contact at A2.1/A2.2 is closed. An example of how to connect locomotive headlights and a smoke generator is shown in figure 1.

Please refer to the corresponding controller manuals for instructions on how to turn individual functions on and off using hand-held controller LH100, the loco-mouse (ROCO/LGB) or from a Control 80f (Märklin/Arnold).

Warranty

Lenz GmbH does everything it can do to ensure that its products are free from defects and will operate for the life of your model railroad equipment. From time to time even the best engineered products fail either due to a faulty part or from accidental mistakes in installation. To protect your investment in Digital Plus products. Lenz GmbH offers a very aggressive 10 year Limited Warranty.

This warranty is not valid if the user has altered, intentionally misused the Digital Plus product, or removed the product's protection, for example the heat shrink

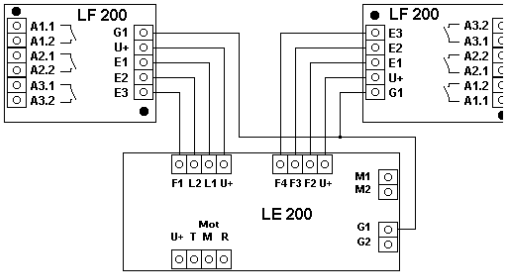

Figure 2: Connecting two LF200s with an LE200

from decoders and other devices. In this case a service charge will be applied for all repairs or replacements. Should the user desire to alter a Digital Plus Product, they should contact Lenz GmbH for prior authorization.

Year One: A full repair or replacement will be provided to the original purchaser for any item that that has failed due to manufacturer defects or failures caused by accidental user installation problems. Should the item no longer be produced and the item is not repairable, a similar item will be substituted at the manufacturers discretion. The user must pay for shipping to an authorized Lenz GmbH warranty center.

Year 2 and 3: A full replacement for any item will be provided that has failed due to manufacturer defects. If the failure was caused by accidental user installation or use, a minimal service charge may be imposed. Should the item no longer be produced and the item is not repairable, a similar item will be substituted at the manufacturers discretion. The user must pay shipping to and from the authorized Lenz GmbH warranty center during this portion of the warranty period.

Year 4-10: A minimal service charge will be placed on each item that has failed due to manufacturer defects and/or accidental user installation problems. Should the item no longer be produced and the item is not repairable, a similar item will be substituted at the manufacturers discretion. The user must pay shipping to and from the authorized Lenz GmbH warranty center during this portion of the warranty period.

Please contact your dealer or authorized Lenz GmbH warranty center for specific instructions and current service charges prior to returning any equipment for repair.

Hüttenbergstraße 29
35398 Gießen, Germany
Hotline: 06403 900 133
Fax: 06403 5332
http://www.lenz.com

Lenz Elektronik GmbH

Lenz Agency of North America
PO Box 143
Chelmsford, MA 01824
ph/fax: 978 250 1494
support@lenz.com