

Different position and altered pin assignment of the CAN and power connectors



Terminating resistors externally switchable and visible



Changed geometric dimensions

## SWITCHING FROM THE PCAN-REPEATER DR TO THE NEW PCAN-REPEATER

# MIGRATION GUIDE

Unlike the PCAN-Repeater DR (IPEH-004038), the PCAN-Repeater (IPEH-004039) was designed for use in CAN CC and CAN FD buses. Therefore, it has no limitations in CAN FD operation and achieves higher data bit rates. Furthermore, it offers additional advantages.

	PCAN-Repeater DR IPEH-004038	PCAN-Repeater IPEH-004039
<b>CAN Specifications</b>	CAN CC with bit rates up to 1 Mbit/s, CAN FD with data bit rates up to 4 Mbit/s (limited functionality).  LED display of bus load and error frames is not possible during CAN FD operation.	CAN CC with bit rates up to 1 Mbit/s, CAN FD with data bit rates up to 8 Mbit/s.  Improved transmission through the use of a CAN FD transceiver. Correct LED indication of CAN traffic and errors during CAN FD operation.
<b>Termination resistors</b>	Each CAN channel can be switched on separately via switches on the circuit board. The housing must be opened.	Each CAN channel can be switched on separately via a switch on the front of the housing. The housing does not need to be opened.
<b>Improved signal quality</b>	-	Adjustable lock time and adjustable recessive bit extension.  This reduces positive backcoupling from network participants under high capacitive load.

## FEATURES RELEVANT FOR THE CONVERSION

When using the PCAN-Repeater as a replacement for the PCAN-Repeater DR, several characteristics must be taken into account:

- Longer signal transit delay
- Changed geometric dimensions
- Changes to the connections in terms of position, plug type, and pinout

	PCAN-Repeater DR IPEH-004038	PCAN-Repeater IPEH-004039
<b>Signal transit delay</b>	115 ns This corresponds to a cable length of 23 m, by which the maximum bus length is reduced.	175 ns This corresponds to a cable length of 35 m, by which the maximum bus length is reduced. At high nominal bit rates such as 1 Mbit/s, the longer signal transit delay is significant.
<b>Dimensions</b>	114.5 x 99 x 22.5 mm (Depth x Height x Width)	108 x 149 x 27 mm (Depth x Height x Width) The greater height must be taken into account during installation.
<b>Connector plug</b>	4-pole screw terminal blocks (Phoenix) for CAN and power.	4-pin (CAN) / 3-pin (Power) push-in connectors.  Using push-in connectors reduces maintenance during operation, as they do not need to be tightened, unlike screw terminals.

## LEDS AND STATUS INDICATOR

Furthermore, the different ways in which device and communication states are signaled must be taken into account.

	PCAN-Repeater DR IPEH-004038	PCAN-Repeater IPEH-004039
<b>LEDs</b>	Traffic, Error, Power	CAN 1, CAN 2, Power
<b>Signaling power supply</b>	<b>Power:</b> <i>Off:</i> No supply <i>Green:</i> Power Ok	<b>Power:</b> <i>Off:</i> No supply <i>Green:</i> Power Ok <i>Red:</i> The device is being reset (for 200 ms on power-on) or the power supply is damaged
<b>Signaling error</b>	<b>Error:</b> (only with CAN CC communication) <i>Red:</i> CAN error frame detection	<b>CAN1 or CAN2:</b> <i>Red flashing:</i> Transmission errors at the physical level <i>Red:</i> Sustained dominant CAN level from external device
<b>Signaling communication</b>	<b>Traffic:</b> (only with CAN CC communication) <i>Orange:</i> Detection of the transmission rate <i>Off:</i> no CAN communication <i>Green slowly flashing (2 Hz):</i> 19 % Bus load <i>Green fast flashing (4 Hz):</i> 20–49 % Bus load <i>Orange slowly flashing (2 Hz):</i> 50–79 % Bus load <i>Orange fast flashing (4 Hz):</i> 80–100 % Bus load	<b>CAN1 or CAN2:</b> <i>Green/green flashing:</i> CAN communication