

ISO 13044-2 in its current draft describes ACV (ACS / FACS) as a system designed for 24 V operation only

Most of the modern brake systems (as considered by R13) can be operated under different voltage levels (8-32V). A mismatch of voltage between tractor and trailer would not have any negative impact on the brakes.

However, a mismatch could affect other systems, such as lights:

- A 24 V tractor operating a trailer with 12 V bulbs
→ damages
- A 12 V tractor operating a 24 V
→ insufficient illumination

Both would not be relevant for ECE55 R13, but could be treated as a recommendation either in R13 or ISO 13044-2 as follows:

- ACV is dedicated either to 24V operation for pure 24V countries or to 12 V operation in pure 12V countries
- In countries where both voltages are used and mixed mode is expected ACV will mainly supply 12V.

An additional technical feature that recognizes the operational voltage of the trailer would be

recommended, that provides this information so that the driver can manually switch to 24V if needed (12V are default - automatically set back after every decoupling). This could be done by an electrical bridge between both permanent supply lines on the 24V trailer, so that one initialization signal would be sent after coupling through one of these pins into the trailer (L10). On the second pin (L11) it could be detected if this signal comes back. If yes, it would be a 24V trailer, if not it would be a 12V trailer.

V → 12 V