Wiring concept for ACV (FACS)

1. General electric trailer supply connection

The tractor circuit provides through T-distributions the entire electric power supply for the trailer, parallel for:

- the ACV / FACS interface (for automated trailer connection)

- a conventional helix cable (for manual trailer connection)

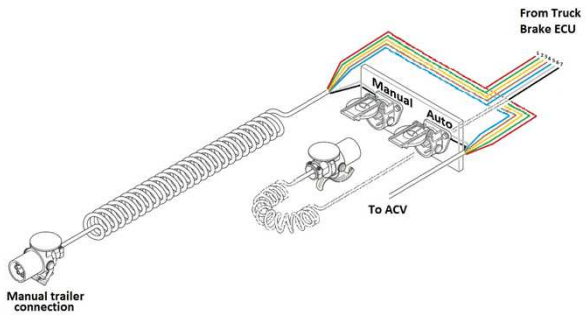
ensuring the entire electric supply including ABS, regardless of the operation mode.

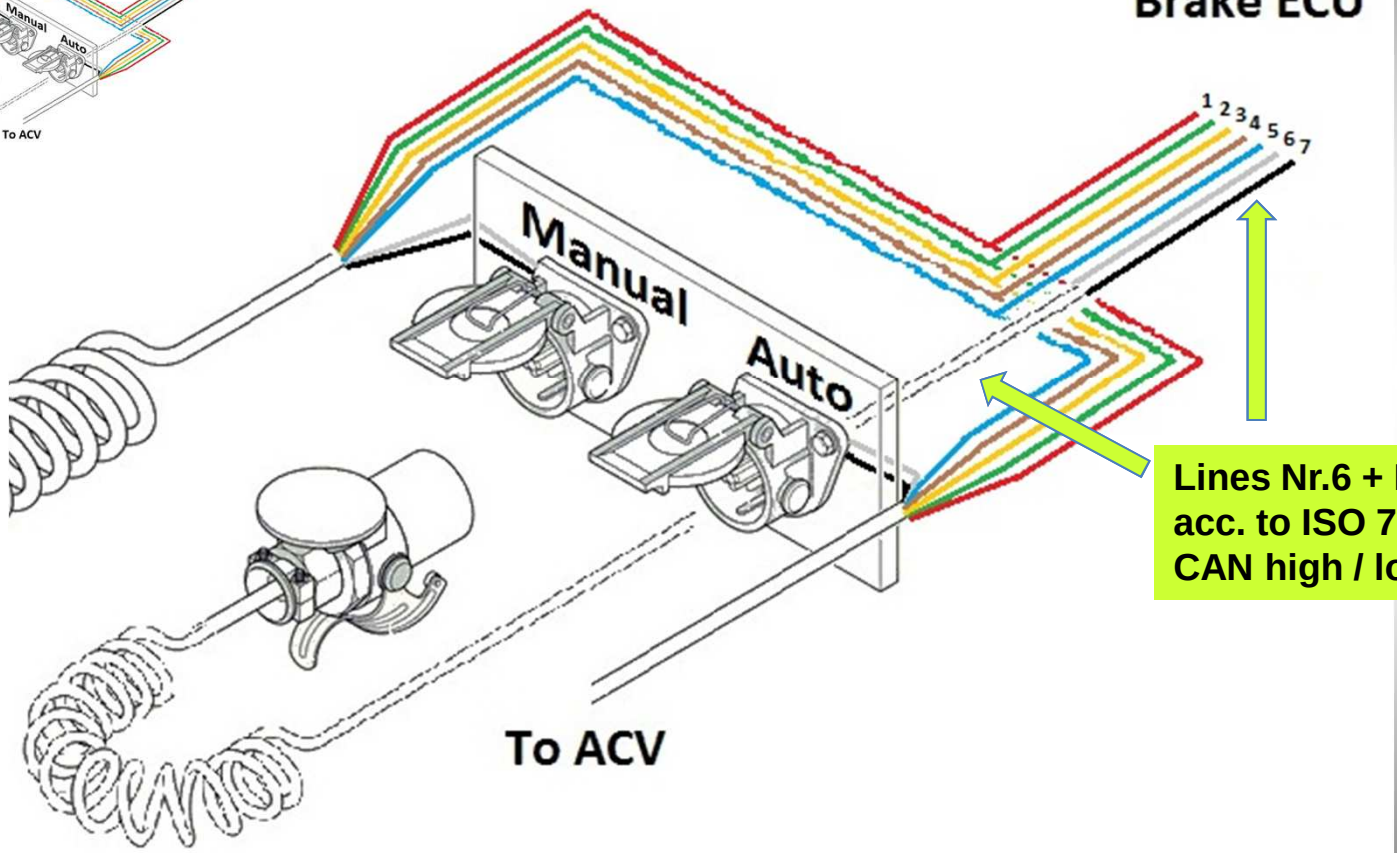
This includes all connections listed in ISO 12098 and connections Nr. 1-5 of the ISO 7638, but excludes Pins Nr. 6 + 7 of ISO 7638.

Since the data communication for EBS would not be given by that, connections Nr. 6+7 have to be treated separately to ensure also this functionality.

Wiring concept for ACV (FACS)

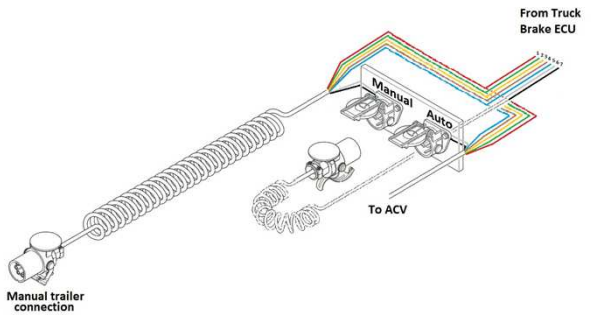
EBS Terminal

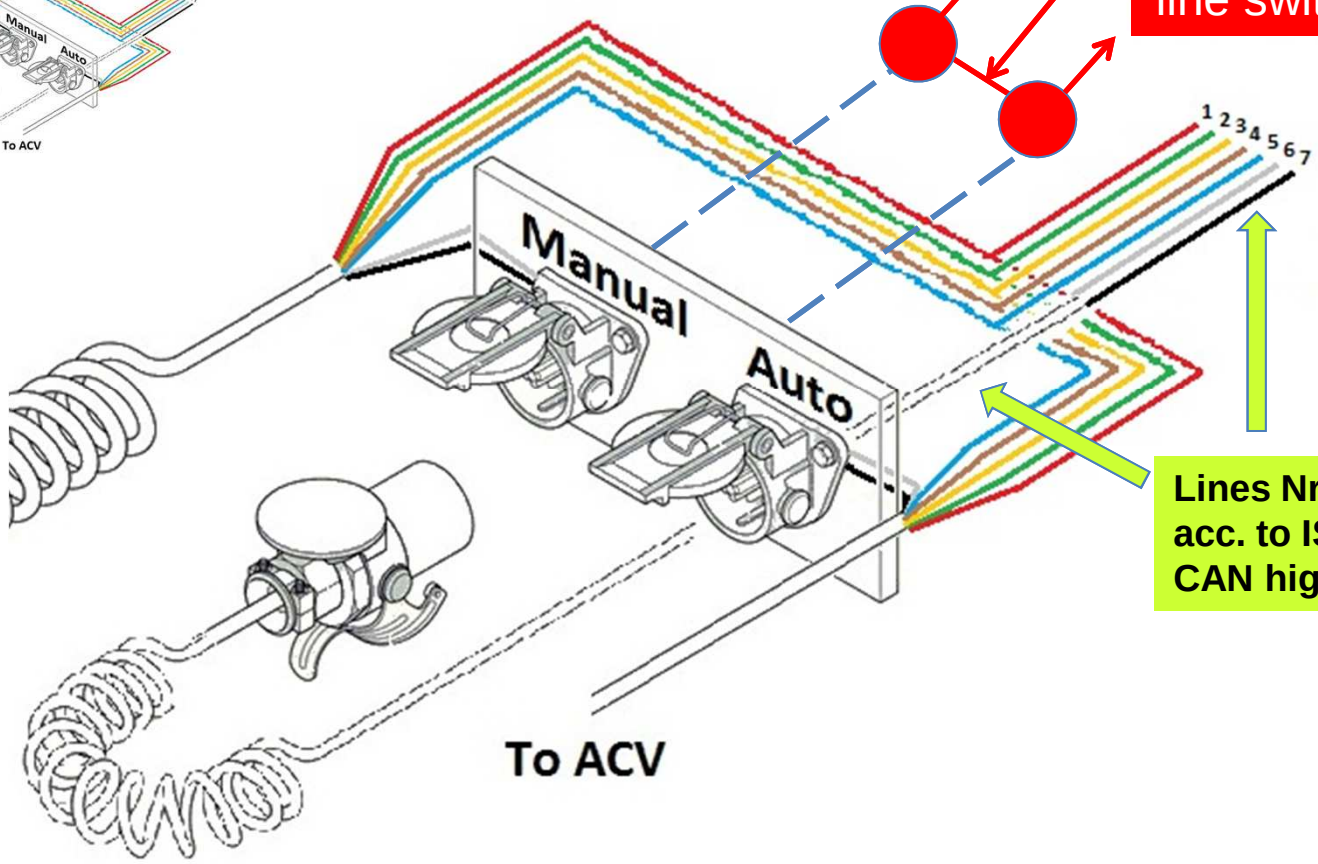




Wiring concept for ACV (FACS)

EBS Terminal





Air supply line switched

Lines Nr.6 + Nr.7 acc. to ISO 7638 CAN high / low

Wiring concept for ACV (FACS)

2. Specific electric connection for EBS CAN data

The two connections Nr.6 and Nr.7 of the ISO 7638, exclusively dedicated to CAN-high and CAN-low for ABS/EBS data communication according to ISO 11992-1 and 11992-2, are treated separately as follows:

- these two lines are without any divisions, distributions, parallelities or dead ends, leading directly from the ECU to a simplified ISO 7638 connector

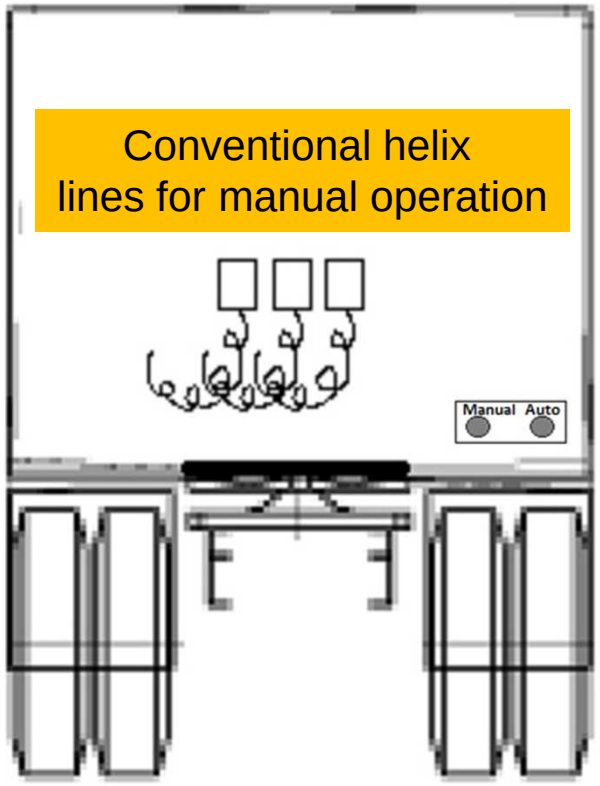
- this connector has to be attached to corresponding sockets located on a common terminal, to ensure full EBS functionality of the trailer

- one of these sockets is dedicated to the manual and the other one for automated EBS connection

- in case of operational mistakes the trailer would at least have its entire electric supply including ABS

Wiring concept for ACV (FACS)

3. Location of Connectors, Sockets and terminals



Tractor with ACV installation

EBS Terminal

EBS terminal uses connector housings according to ISO 7638, equipped with only 2 pins, Nr. 6 + 7

Wiring concept for ACV (FACS)

Contact No.	a_{min} mm²	Reference	Function
L 1	4	ISO 7638 Pin 1	ABS/EBS plus electrovalve
L 2	1,5	ISO 7638 Pin 2	ABS/EBS plus electronics
L 3	1,5	ISO 7638 Pin 3	ABS/EBS minus electronics
L 4	4	ISO 7638 Pin 4	ABS/EBS minus electrovalve
L 5	1,5	ISO 7638 Pin 5	ABS/EBS warning device
L 6	1,5	ISO 7638 Pin 6	ABS/EBS CAN High according to ISO 11992-1 and 11992-2, for data interchange of braking systems and running gear
L 7	1,5	ISO 7638 Pin 7	ABS/EBS CAN Low according to ISO 11992-1 and 11992-2, for data interchange of braking systems and running gear
L 8	6	New	Return for pin L 10
L 9	6	New	Return for pin L 11
L 10	6	New	Permanent power supply for additional equipment 1
L 11	6	New	Permanent power supply for additional equipment 2
L 12	2,5	New	Electric landing gear 1
L 13	2,5	New	Electric landing gear 2
L 14	1,5	New	Multi media
L 15	1,5	New	Multi media
R 1	1,5	ISO 12098 Pin 1	Left-hand direction indicator light
R 2	1,5	ISO 12098 Pin 2	Right-hand direction indicator light
R 3	1,5	ISO 12098 Pin 3	Rear fog light
R 4	2,5	ISO 12098 Pin 4	Common return for pins R1-R3, R5-R12
R 5	1,5	ISO 12098 Pin 5	Left-hand rear positions light(s), left-hand marker lights and rear registration plate illumination
R 6	1,5	ISO 12098 Pin 6	Right-hand rear positions light(s), right-hand marker lights and rear registration plate illumination
R 7	1,5	ISO 12098 Pin 7	Stop lights
R 8	1,5	ISO 12098 Pin 8	Reversing light
R 9	1,5	ISO 12098 Pin 9	Ignition 24V
R 10	1,5	ISO 12098 Pin 10	Sensing device with common return
R 11	1,5	ISO 12098 Pin 11	Starting-traction control system
R 12	1,5	ISO 12098 Pin 12	Axle lifting device
R 13	2,5	ISO 12098 Pin 13	Common return for pin R14 and R15
R 14	1,5	ISO 12098 Pin 14	CAN High according to ISO 11992-1 and 11992-3, for data interchange of equipment other than braking systems and running gear
R 15	1,5	ISO 12098 Pin 15	CAN Low according to ISO 11992-1 and 11992-3, for data interchange of equipment other than braking systems and running gear
I			Control line
II			Supply line

[a] Nominal cross-sectional area of the conductor connected at the rear terminal of the pin and tube