

# Trailer EBS E Modulator: Connections for cables and pipes

### Cable connections

GENERIC IN/OUTPUTS

GIO5	Modulator
GIO4	Power
GIO3	Subsystems
GIO2	Subsystems
GIO1	IN / OUT
ABS-f/GIO6	GIO7/ABS-e
ABS-d	ABS-c

S Standard P Premium

### Piping connections left side

Brake Actuators (11)  
 Supply Reservoir - brake  
 Suspension bellows pressure  
 Control PREV (Port 21)

### Piping connections right side

without PEM:  
 Brake Actuator Test connector  
 Supply Reservoir - brake  
 Brake Actuators (11)

### Piping PEM (Pneumatic Extension Module)

Springbrakes (12) PREV (22)  
 Aux. supply - e.g. Reservoir - air suspension  
 Levelling valve  
 Lift axle/ ECAS valve  
 Raise/lower valve  
 Test point Actuator pressure  
 Supply (PREV 1-2) Reservoir - brake

## Cables for connecting Trailer EBS E Modulator

### GIO

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**Wear sensor** GIO1...4 GIO1...7  
 449 816 013 0 1,3 m

**Adapter** GIO1...4 GIO1...7  
 449 819 010 0 1 m

**GIO - open end** GIO 1...4 GIO 1...7  
 4-core cable for duplicate GIOs  
 449 535 060 0 6 m

**Traction help / forced lowering** GIO1 + 3 GIO1 + 3  
 449 815 253 0 6 m / 6 m  
 449 815 258 0 15 m / 6 m

**24N / TH / forced lowering** GIO1 + 3 + IN / OUT GIO1 + 3 + IN / OUT  
 449 356 023 0 1 m / 0,4 m

**Lift axle valve** GIO1...4 GIO1...6  
 449 443 008 0 0,8 m  
 449 443 010 0 1 m  
 449 443 020 0 2 m  
 449 443 040 0 4 m  
 449 443 060 0 6 m  
 449 443 100 0 10 m

**Pressure sensor** GIO1...3 GIO1...3  
 axle load sensor or demand pressure sensor  
 449 812 030 0 3 m  
 449 812 100 0 10 m

### GIO

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**Lift axle valve** GIO1...4 GIO1...7  
 449 611 030 0 3 m  
 449 611 040 0 4 m  
 449 611 060 0 6 m  
 449 611 080 0 8 m

**ECAS solenoid valve** GIO2 + 3  
 449 445 010 0 1 m  
 449 445 030 0 3 m  
 449 445 050 0 5 m

**Height sensor** GIO1 + 4  
 for ECAS and mechanical suspension  
 449 811 010 0 1 m  
 449 811 050 0 5 m  
 449 811 080 0 8 m

**ECAS (Vario-C housing)** GIO4  
 449 438 050 0 5 m

**Telematic** GIO5  
 449 915 010 0 1 m

**ABS Sensor + GIO6 / 7** GIO6 + 7  
 449 818 022 0 0,4 m / L<sub>1</sub> / L<sub>2</sub> 0,4 m / 0,4 m

**Y-cable for GIO** GIO1...3 GIO1...3  
 449 629 022 0 0,4 m / L<sub>1</sub> / L<sub>2</sub> 0,4 m / 0,4 m

### Modulator

P Premium

**EBS relay valve** Modulator  
 449 429 030 0 3 m  
 449 429 080 0 8 m

**ABS relay valve** Modulator  
 449 436 010 0 1 m  
 449 439 030 0 3 m  
 449 436 080 0 8 m

### Power

S Standard P Premium

**ISO 7638 semi-trailer** Power Power  
 449 173 090 0 9 m  
 449 173 120 0 12 m  
 449 173 130 0 13 m

**ISO 7638 draw-bar trailer** Power Power  
 449 273 100 0 10 m  
 449 273 120 0 12 m

**ISO 7638 open end** Power Power  
 449 371 120 0 12 m  
 449 371 180 0 18 m

### ABS sensor c, d, e, f

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**Extension cable** ABS-c + d ABS-c...f  
 449 723 018 0 1,8 m  
 449 723 023 0 2,3 m  
 449 723 030 0 3,0 m  
 449 723 040 0 4,0 m  
 449 723 080 0 8,0 m  
 449 723 100 0 10,0 m

### Subsystems

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**SmartBoard** Subsystems Subsystems  
 449 911 060 0 6 m

**SmartBoard + IVTM** Subsystems  
 449 916 182 0 0,4 m L<sub>2</sub> - SmartBoard  
 449 916 253 0 0,4 m / 4 m L<sub>1</sub> - IVTM  
 6 m / 6 m

**Universal 8 core** Subsystems Subsystems  
 449 437 120 0 12 m

**Telematic** Subsystems Subsystems  
 449 914 010 0 1 m

**ECAS RCU** Subsystems Subsystems  
 449 628 050 0 5 m

**IVTM ECU** Subsystems Subsystems  
 449 913 050 0 5 m

### IN / OUT

S Standard P Premium

**ISO 1185 (24N)** IN / OUT IN / OUT  
 449 349 040 0 4 m  
 449 349 100 0 10 m

**ISO 1185 (24N)** IN / OUT IN / OUT  
 449 350 010 0 1 m

**TCE (socket X22)** IN / OUT IN / OUT  
 449 348 020 0 2 m

## Installation Instructions

### How to pipe

Hose adaptor 893 129 467 4

Fitting for 12 x 1.5 mm plastic tube  
 Brake hose 11.5 x 3.5 mm  
 Hose to be clipped after 500 mm  
 Insertion depth  
 Dismantling tool 899 700 920 2

- Use plastic tube according to DIN 74324, 73378 or ISO 7628.
- Mark insertion length on the pipe according table using e.g. tape.
- Pipes must be cut at right angles. A maximum deviation of 5° is permissible.
- Fully push in the pipe into the bottom of the connector.
- Check that the mark is touching the connector to ensure insertion is complete.
- Control connection with pulling the pipe with 20 to 50 N where the pipe must not move out of the connector.
- A dismantling tool is required to remove a pipe from the push-in coupling. This so-called 'Safety Tool' is used to release the clamp of the pipe in the push-in coupling.

Plastic tube	Product number	Insertion depth	Hose adaptor Product number
8 x 1 mm	828 251 008 6	20.5 mm	-
12 x 1.5 mm	828 251 112 6	25.0 mm	893 129 467 4
15 x 1.5 mm	828 251 115 6	27.0 mm	-
16 x 2 mm	828 252 116 6	27.0 mm	-

### How to connect cables

1, 2, 3, 4  
 max. 300 mm  
 R ≥ 10 x ∅

- The installation position of ISO 7638 socket is 0°...30° down inclined. Otherwise water can penetrate into the contact area while coupling the connector.
- Cables should only be fastened on inflexible solid elements with a rigid connection to the device e. g. the vehicle frame. Fastening cables on flexible elements can lead to cable breakdown and leakages.
- Open end cables have to be sealed separately or be coupled to a sealed junction box.