

Trailer Electro-Pneumatic Module (TEPM-S / TEPM-P)

Function

The **Trailer Electro-Pneumatic Module** is used as a 3rd modulator to extend the functionality of the TEBS G2 Family Brake Module to cover full trailers, semi-trailers and centre-axle trailers that require 4S/3M or 6S/3M configurations.

The Trailer Electro-Pneumatic Modules have pressure control channels with internal pressure sensors and also provide connection for wheel speed sensor inputs which are processed and sent via the J1939 CAN to the TEBS G2 Family Brake Module. The modules receive the required brake demand over the J1939 CAN from the TEBS G2 Family Brake Module which is responsible for both load sensing and ABS functions.

The Trailer Electro-Pneumatic Module - Standard (TEPM-S) has an internal pressure sensor and three solenoids controlled by an electronic controller. The module also provides connection for two wheel speed sensor inputs and an external pressure sensor.

The Trailer Electro-Pneumatic Module - Premium (TEPM-P) extends the functionality provided by the TEPM-S by providing two additional internal pressure sensors (suspension load and brake demand) and two additional delivery ports. The module also provides two additional auxiliary input/output pins (AUXIO), which can be used to expand the existing capability provided by the TEBS G2 Family Brake Module. In addition the module has provision for two analogue inputs allowing external load and brake demand sensors to be connected as required. The integrated ECU is designed for 12 V and 24 V systems to suit worldwide applications.



Technical Features

TEPM-S

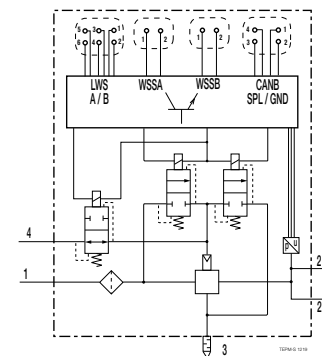
Maximum operating pressure:	12.5/10.0 bar
Operating temperature range:	-40 °C to +80 °C
Weight:	1.70 kg approx.
Nominal voltage:	24 V
Operating voltage:	18 to 32 V

TEPM-P

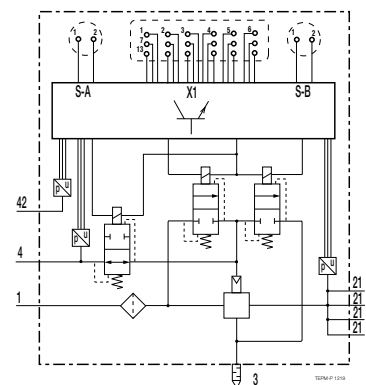
Maximum operating pressure:	10.0 bar
Operating temperature range:	-40 °C to +85 °C
Weight:	2.35 kg approx.
Nominal voltage:	12/24 V
Operating voltage:	9 to 32 V

Standard Symbol as DIN ISO 1219

TEPM-S



TEPM-P



Trailer Electro-Pneumatic Module (TEPM-S / TEPM-P)

Range Overview

Part No.	Type No.	Model	Installation fixings	Recommended Torque
K021940 ¹⁾	ES2070	TEPM-S	2 x Ø8.5	20 ± 4 Nm
K027900 ¹⁾	ES2071	TEPM-P	2 x Ø10.2	40 ± 5 Nm

1) The part number of the module will carry two suffices, firstly "V##" which represents the software revision of the product, e.g. V01, V02 etc., and secondly "N##" which defines the packaging requirements of different market sectors, e.g. N00, N50. Example: K021940V00N00 - is supplied with software to revision 00 and is supplied without packaging.

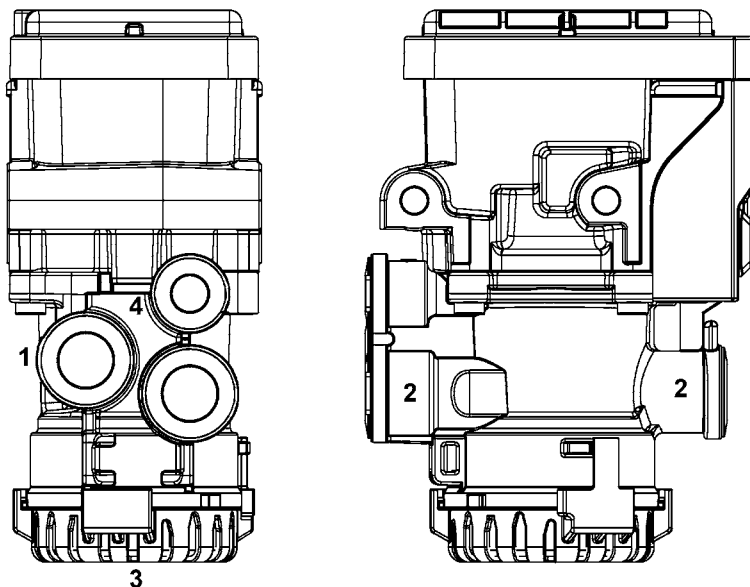
Service Parts	TEPM-S	TEPM-P
Silencer	K000847K50	-
Side Cover	K000846K50	K017877K00
Port Filters	K004904K50 *	K004904K50 * K108643K50 **
Blanking Plug for Aux connector	-	Z005861

* contains 10 conical filters for Port 1 of TEPM-S or TEPM-P

** contains 20 flat filters for Ports 4 & 42 of TEPM-P

Pneumatic Connections

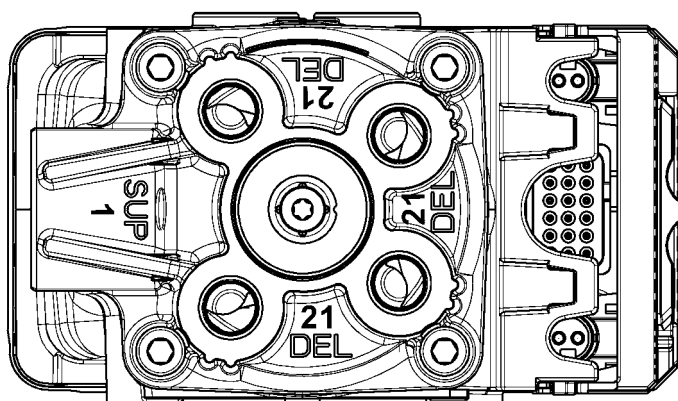
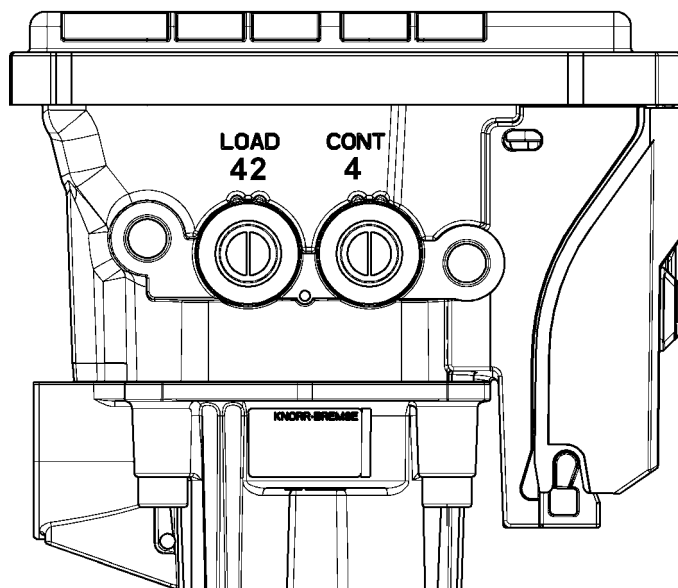
TEPM-S



Port	Number of ports	Connection/remarks	Thread	Recommended Torque
1	1	Supply from reservoir	M22x1.5	60 Nm
2	2	Delivery to brake chambers (max. 2 x Type 30)		
3	1	Signal pressure from control (yellow) line	M16x1.5	45 Nm

Trailer Electro-Pneumatic Module (TEPM-S / TEPM-P)

TEPM-P

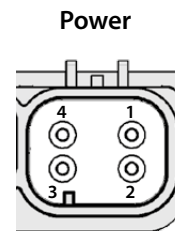
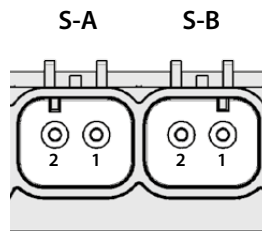
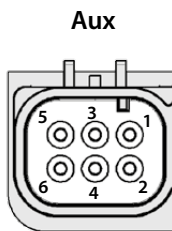
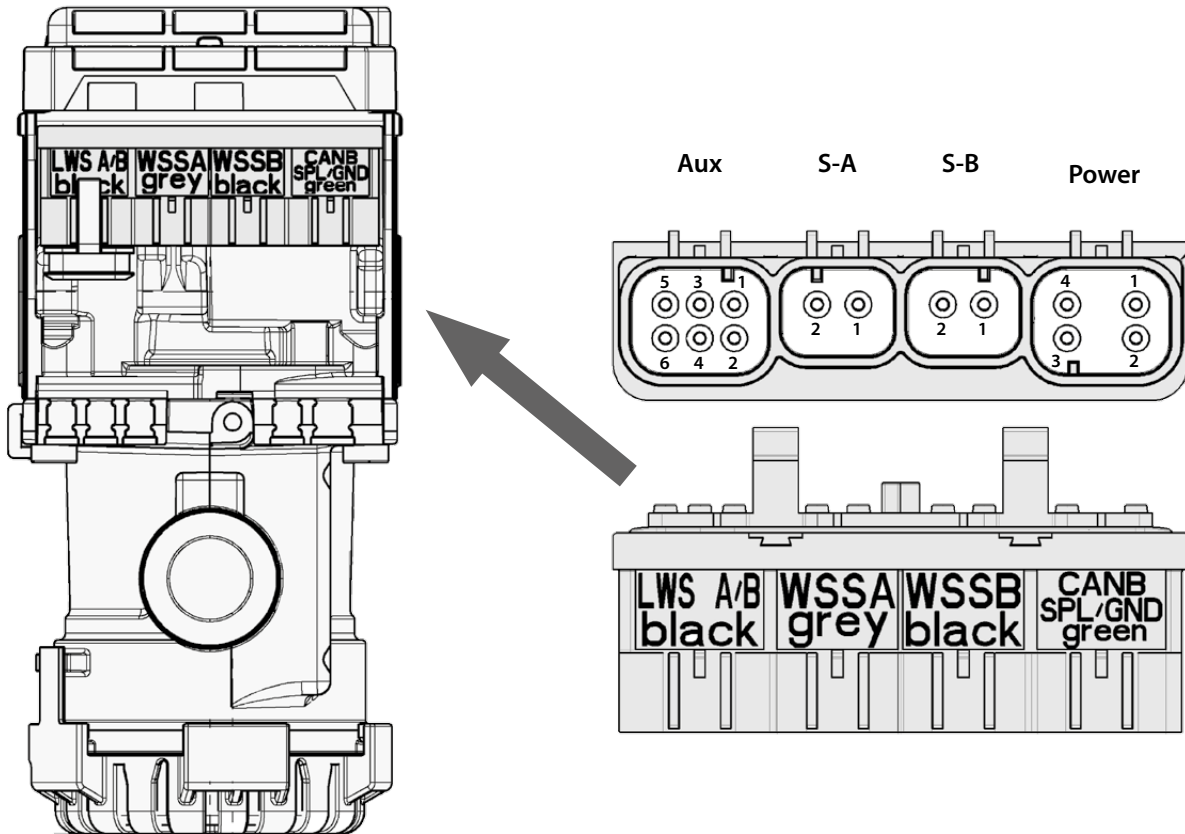


Port	Number of ports	Connection/remarks	Thread	Recommended Torque
1	1	Supply from reservoir	M22x1.5	60 Nm
2	4	Delivery to brake chambers (max. 4 x Type 30)	M16x1.5	45 Nm
3	1	Signal pressure from control (yellow) line		
4	1	Air suspension		

Trailer Electro-Pneumatic Module (TEPM-S / TEPM-P)

Electrical Connections

TEPM-S



Pin No.	Function
1	N/A
2	N/A
3	N/A
4	Sensor 1 Ground
5	Sensor 1 Supply
6	Sensor 1 Signal

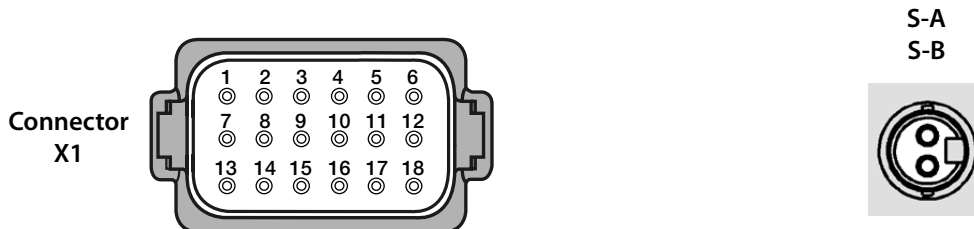
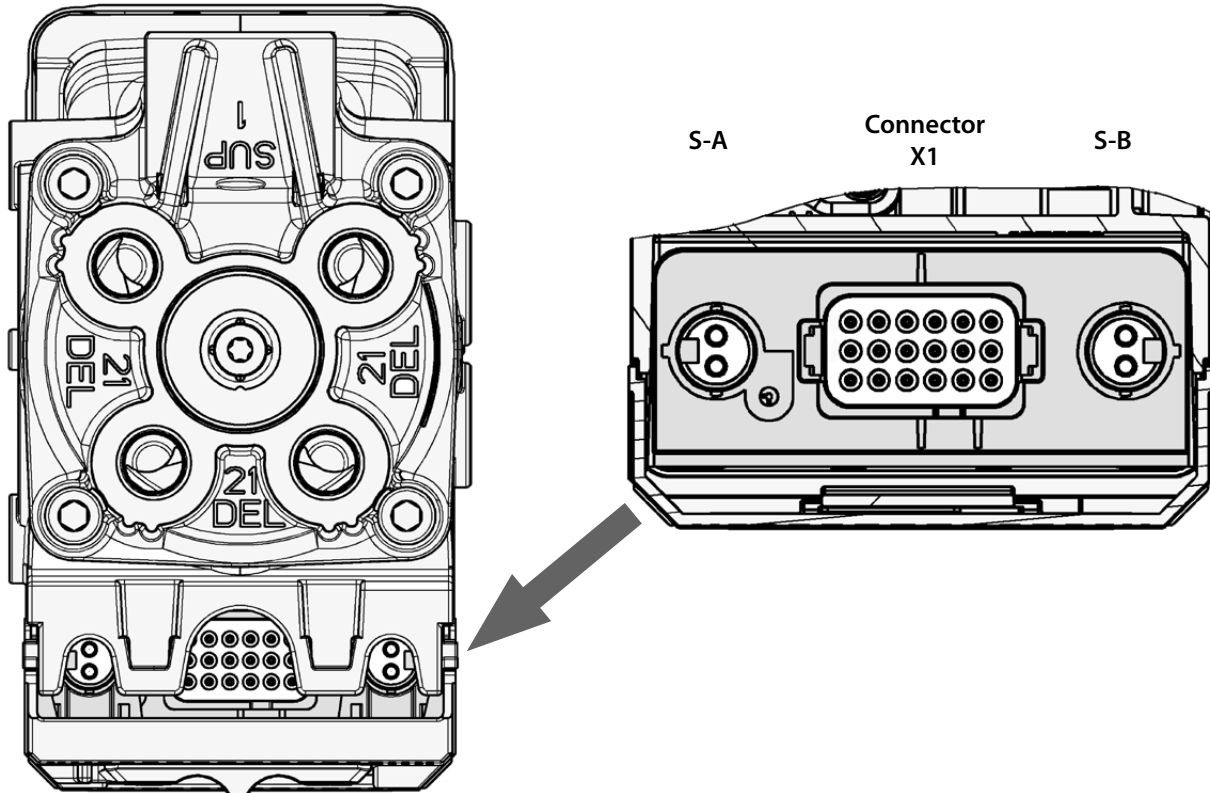
S-A	Wheel speed sensor inputs for 4S/3M and 6S/3M configurations
S-B	

Pin No.	Function
1	Battery ground
2	Battery supply
3	J1939 CAN (5 V) High
4	J1939 CAN (5 V) Low

When not used a blanking plug (Z005861) must be fitted to the Aux connector

Trailer Electro-Pneumatic Module (TEPM-S / TEPM-P)

TEPM-P



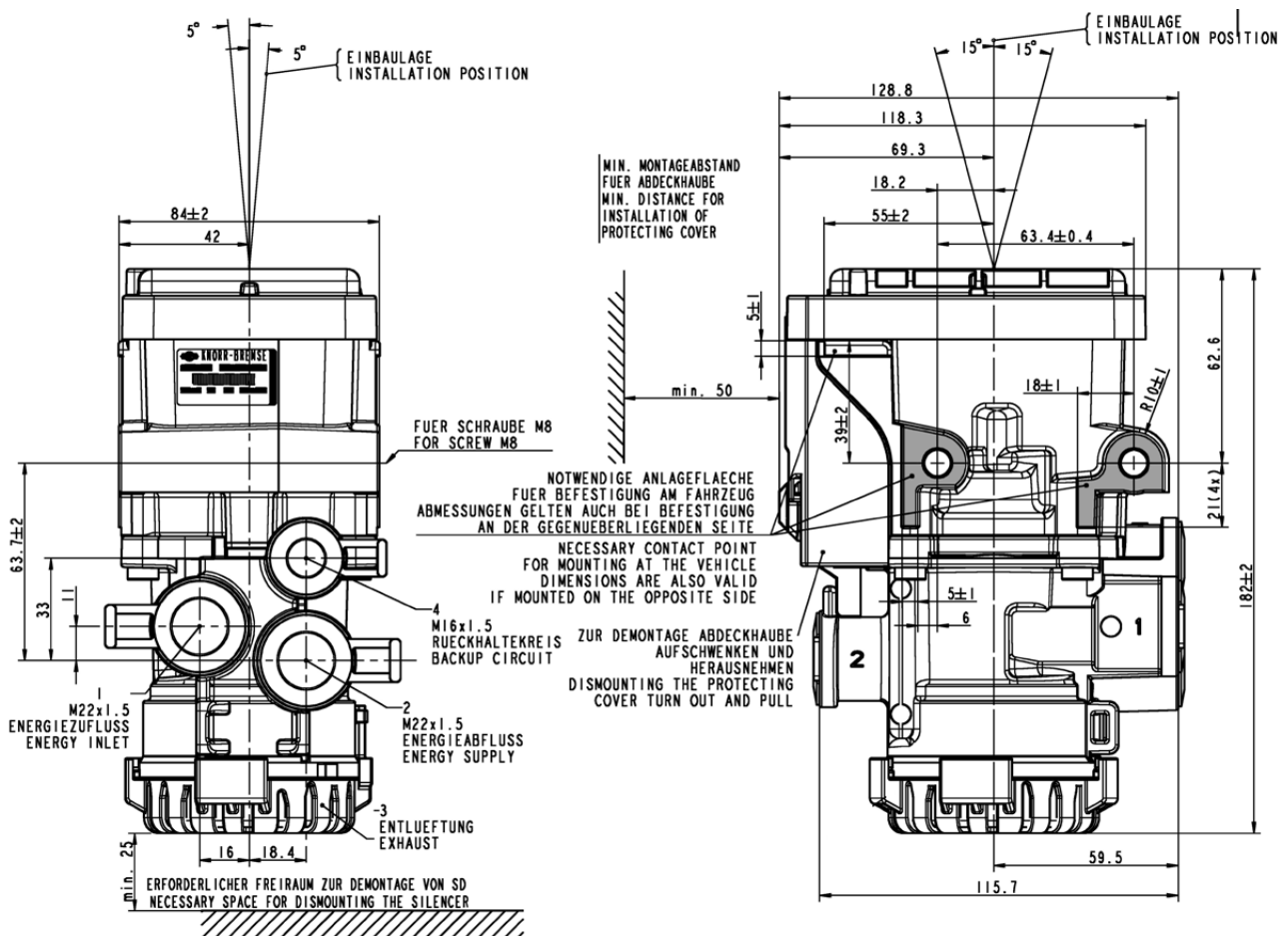
Pin No.	Function	Pin No.	Function
1	J1939 CAN (5 V) Low	10	Ground Sensor 1
2	Not used	11	Supply Sensor 2
3	Not used	12	Not used
4	Supply Sensor 1	13	Not used
5	Not used	14	AUXIO1
6	Supply	15	Ground AUXIO 1 and 2
7	J1939 CAN (5 V) High	16	Ground Sensor 2
8	AUXIO2	17	Input Sensor 2
9	Input Sensor 1	18	Ground

S-A	Wheel speed sensor inputs for 4S/3M and 6S/3M configurations
S-B	

Trailer Electro-Pneumatic Module (TEPM-S / TEPM-P)

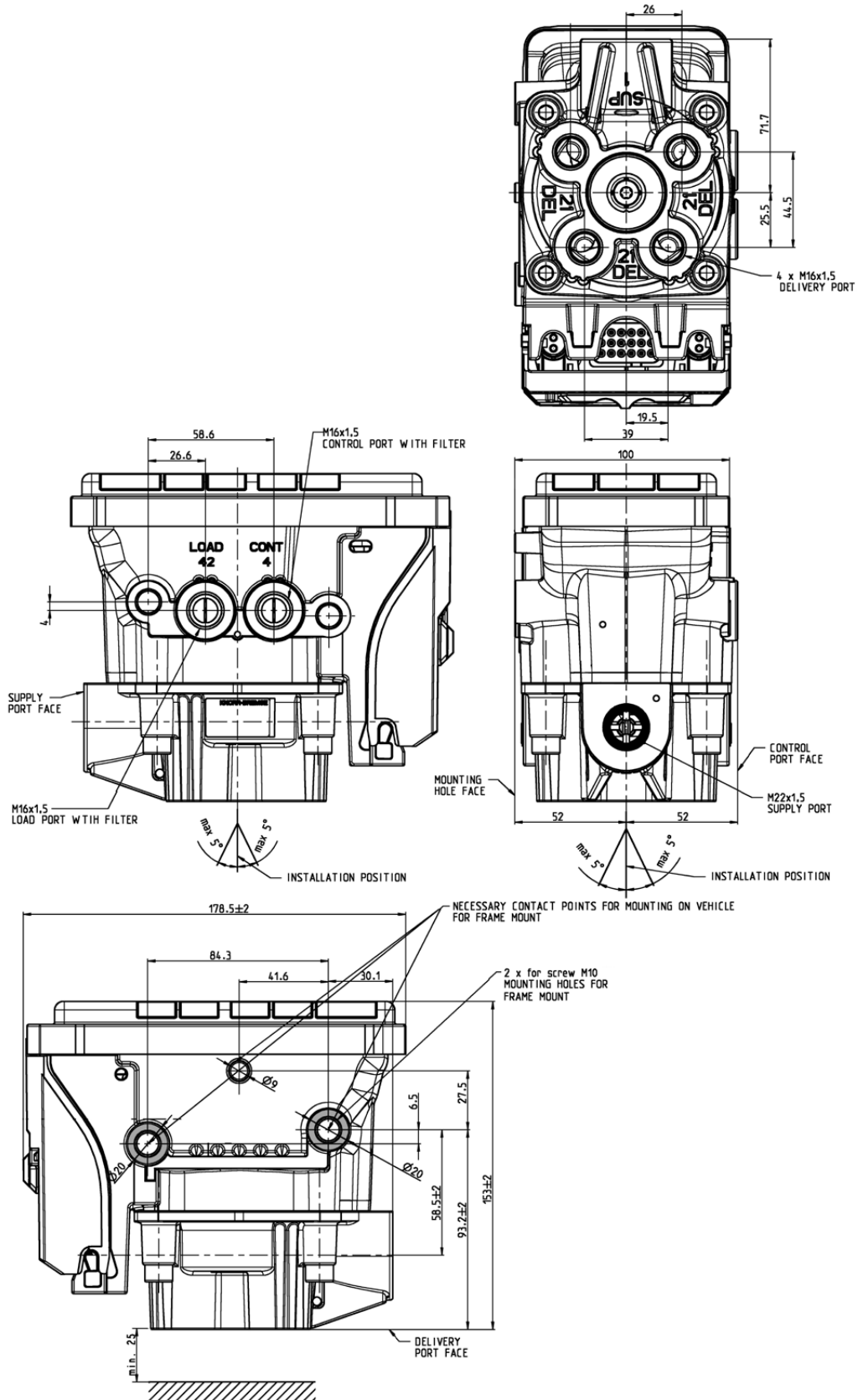
Dimensions

TEPM-S



Trailer Electro-Pneumatic Module (TEPM-S / TEPM-P)

TEPM-P



Trailer Electro-Pneumatic Module (TEPM-S / TEPM-P)

Using a Trailer Electro-Pneumatic Module on the Front Axle of a Drawbar Trailer

If a Trailer Electro-Pneumatic Module (TEPM-S or TEPM-P) is used to control the front axle brakes on a drawbar trailer it is important that certain steps are taken to ensure the response times required by legislation are met:

- The Manoeuvring Valve or Park/Shunt Valve with Front Axle Release Valve must be mounted near the front of the vehicle to keep the piping between it and the TEPM as short as possible.
- The pipe between the reservoir and the TEPM must be 15 mm O/D.

Revision Details

Rev. 005	January 2019	New Layout



Knorr-Bremse Group

Knorr-Bremse Systems for Commercial Vehicles

Moosacher Strasse 80 | 80809 Munich | Germany
Tel: +49 89 3547-0 | Fax: +49 89 3547-2767
WWW.KNORR-BREMSECVS.COM

Note

All information is subject to change. A printed version of this document may therefore not correspond to the latest revision. To obtain the latest version, please visit our website www.knorr-bremseCVS.com or contact a Knorr-Bremse representative in your area.

If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out.

Copyright © Knorr-Bremse AG

All rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring.

Up-to-date information on our products can be found on our website www.knorr-bremseCVS.com

Disclaimer

The information contained herein is intended for the exclusive use of trained persons within the commercial vehicle industry, and must not be passed on to any third party. All recommendations regarding products and their servicing or usage are with reference to Knorr-Bremse products and should not be considered applicable to products from other manufacturers.

This information does not purport to be all-inclusive and no responsibility is assumed as a result of its use. We cannot accept any liability nor offer any guarantee regarding data accuracy, completeness or timeliness.

The information does not represent any guarantee or ensured characteristics of the Products or Systems described. No liability can be accepted based on the information, its use, recommendations or advice provided. In no event may we be held liable for any damage or loss except in the case of wilful intent or gross negligence on our part, or if any mandatory legal provisions apply.

This disclaimer is an English translation of a German text, which should be referred to for all legal purposes. Any legal disputes arising from the use of this information shall be subject to German law.