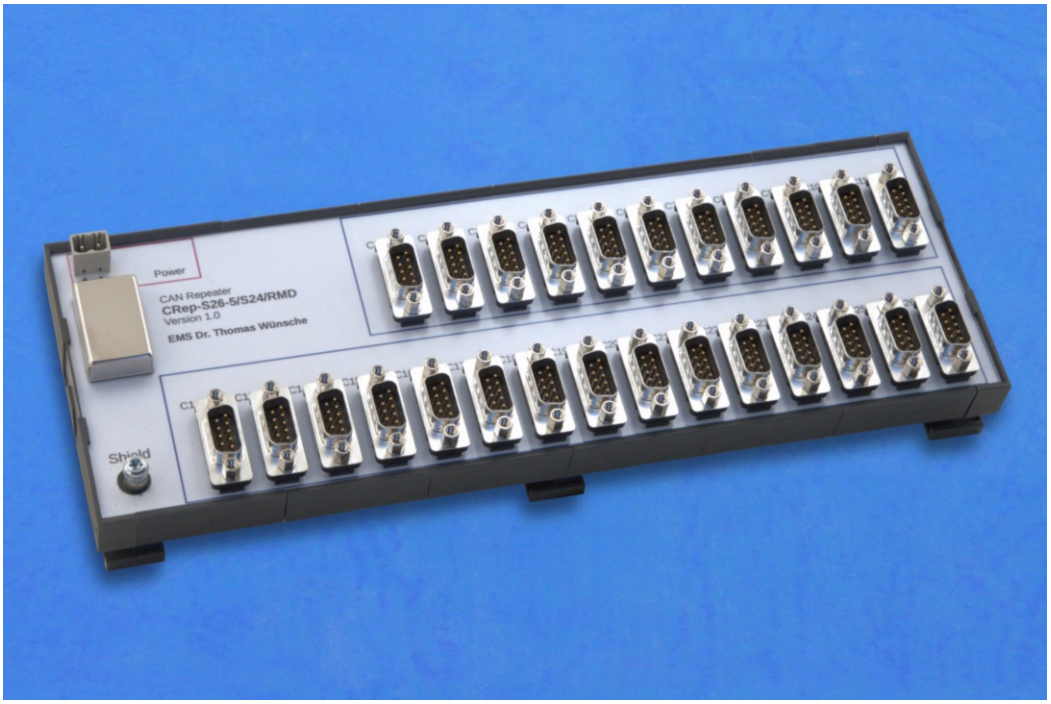

CAN Repeater

CRep S26-.../S24/RMD

User Manual

EMS
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User manual for CAN Repeater CRep S26-.../S24/RMD

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If you discover a security vulnerability in one of our products, please report it to **security@ems-wuensche.com**. Thank you for your support.

Our products are continuously improved. If changes foreseeable have influence on the functionality and/or specifications of the device, we will inform the customer about such changes.

WARNING: CRep S26 hardware and software may not be used in applications where damage to life, health or private property may result from failures in or caused by these components.

Content

1 Overview

1.1 Attributes

- Protocol transparent CAN repeater
- 26 CAN channels
- Low propagation delay
- ISO 11898 compatible bus interface
- Detach of dominant locked bus segments
- Galvanic separation of power supply
- With 120 Ohm termination
- Rail mountable

1.2 General Description

The CAN repeater CRep S26 transmits and amplifies signals transparent to the CAN protocol. Each of the 26 CAN connections has the physical behaviour of a single bus node. They permit a flexible design of the network topology and offer special support for star structured networks. For each CAN channel a termination resistor is mounted.

The presence of power is indicated by a LED. Furthermore each CAN channel is provided with a LED. When a CAN LED is on, it indicates that a node connected to this channel has generated a CAN message being propagated to all other channels.

The internal logic shares the same ground potential as the CAN transceivers (CAN ground). The connected power supply is galvanically separated from this potential.

There is a shield connector with a M4 screw on the front panel. Each metal housing of the D-Sub9 connectors is connected to this shield by a 1nF/1kV ceramic capacitor. The shield is galvanically coupled to CAN ground at a star point located near the M4 terminal on the PCB.

The user has to take care that the shield is connected with low impedance to the machines ground potential by using a short connection with sufficient diameter.

1.3 Ordering Information

12-06-10x-yy	**CRep S26-.../S24/RMD** Multiport CAN repeater for rail mounting 120 Ohm termination resistors (... inhibit time)

Note: x ... In case of ordering please specify the baud rate to determine the inhibit time:

2	-5	500ns
3	-10	1000ns
4	-20	2000ns
5	-50	5000ns
6	-100	10000ns

yy denotes language of delivery:

10 German
20 English

Example for CRep S26-5/S24/RMD:

CRep	:	CAN Repeater
S	:	star topology
26	:	channel count 26
5	:	5x100ns=500ns inhibit time
S24	:	single supply, nominal 24V
RMD	:	rail mountable device

Within this document CRep S26-.../S24/RMD may be refered as CRep S26.

2 Electrical Characteristics

2.1 Absolute Limiting Values

Any (also temporary) stress in excess of the limiting values may cause permanent damage on CRep S26 and connected devices.

Parameter	Min.	Max.	Unit
Storage temperature	-40	+80	°C
Operating temperature	0	+60	°C
Power supply voltage	-100	+35	V
Voltage on CAN lines	-30	+30	V

2.2 Nominal Values

All values, unless otherwise specified, refer to a supply voltage of 24 V and an environmental temperature of 20 °C.

Parameter	Min.	Typ.	Max.	Unit
Current consumption (no load)	-	100	-	mA
Current consumption (250kBit/s, 100% busload)	-	280	-	mA
Power supply voltage	19	24	30	V
Propagation delay between 2 arbitrary CAN channels	-	140	180	ns
Baud rate (500ns inhibit time)	250	-	500	kBaud
Termination resistor	118	120	123	Ohm
Isolation voltage of power supply	-	-	1000	V
Weight	-	670	-	g

3 Operating Instructions

3.1 Pin Assignment

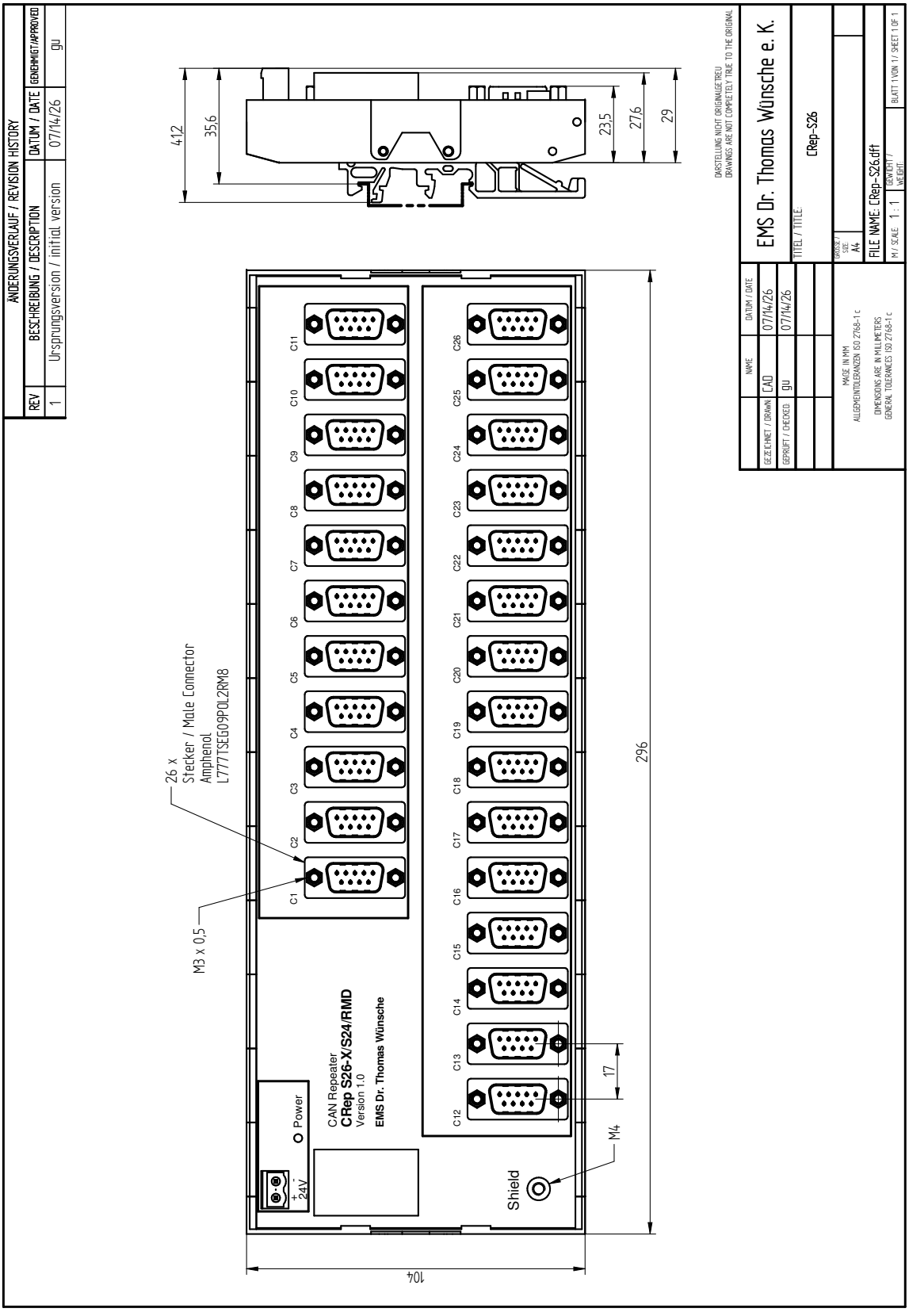
CAN connector C1-C26 (male connectors)**:**

Pin	Name	Function
1	NC	not connected
2	CAN_L	CAN low bus line
3	GND	CAN ground
4	NC	not connected
5	NC	not connected
6	NC	not connected
7	CAN_H	CAN high bus line
8	NC	not connected
9	NC	not connected

Power connector

Pin	Function
+	Power supply voltage 24 V
-	Power supply ground

3.2 Dimensions



4 Appendix

4.1 Instruction for Disposal

Electronic Equipment Act (WEEE)

EMS is selling its products exclusively to commercial customers. This is the reason why all devices are designed for commercial use and have to be disposed appropriately. In accordance to § 10 para. 2 clause 3 Electronic Equipment Act (WEEE) the disposal of EMS products is regulated the following way.

The equipment must not be disposed at the public collection points. In accordance with the applicable law the disposal has to be done by the customer for own account. The same applies to products, which have been sold to third parties, if those parties do not take care of a disposal in accordance to the applicable law. As an alternative the products can be returned to EMS free of charge.

4.2 CE Conformity

Declaration of Conformity

CE

The manufacturer

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85304 Ilmmünster

hereby declares, that the following product:

Name	Article Number
CRep-S26-x/S24/RMD	12-06-10x-10

meets the requirements of the following standards:

Electromagnetic Immunity
EN 55035:2018-04; VDE 0878-35:2018-04 – Electromagnetic compatibility of multimedia equipment – Immunity requirements (CISPR 35:2016, modified); German version EN 55035:2017

Electromagnetic Emission
EN 55032:2016-02; VDE 0878-32:2016-02 – Electromagnetic compatibility of multimedia equipment – Emission Requirements (CISPR 32:2015); German version EN 55032:2015

and therefore conform with the EU requirements on:

Electromagnetic compatibility (2014/30/EU)

In accordance with the above mentioned EU directives, the EC declarations of conformity and the associated documentation are held at the disposal of the competent authorities.

RoHS 3

The RoHS 3 (EU 2015/863) commits manufacturers of „Electrical and Electronic Equipment" (EEE) to secure compliance with the RoHS Directive before placing a CE mark.

Based on technical documentation and to the best of our knowledge, we hereby confirm that the above mentioned products do not contain any of the restricted substances according to Article 4 of the RoHS Directive in excess of the maximum concentration values tolerated by weight in any of their homogeneous materials.

Ilmmünster, 10.07.26

Dr. Thomas Wünsche

EMS Thomas Wünsche