

tranSpeed[®]

TSU25DB

TSU25DB-PIR

Long Distance Reader

Wiring and Installation

Instructions

ts_tsu25db_wi_en_v171209_as_bf_de

Art. #896130

Regulatory Notices

Europe

Hereby, deister electronic GmbH declares that this equipment - if used according to the instructions - is in compliance with the essential requirements and other relevant provisions of the RTTE Directive 1999/5/EC.

A full declaration of conformity can be requested at:

info@deister-gmbh.de



Approved for use in all European countries.

FCC Digital Device Limitations Radio and Television Interference

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and television reception.

Caution! Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

FCC Notice

To comply with FCC Part 15 rules in the United States, the system must be professionally installed to ensure compliance with the Part 15 certification. It is the responsibility of the operator and professional installer to ensure that only certified systems are deployed in the United States. The use of the system in any other combination (such as co-located antennas transmitting the same information) is expressly forbidden.

FCC Radiation Exposure Statement

This equipment complies with the FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and the human body.

Industry Canada

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

© Copyright 2009 by deister electronic GmbH

Disclaimer

deister electronic GmbH is not able to supervise the observance of the instructions given in this manual as well as the conditions and methods used during installation, operation and maintenance of the electronic devices and components respectively. Therefore we disclaim liability and reject responsibility for any losses, damages or costs that are caused by misapplication, installation, handling errors or faulty operation or related to the above in any other way. All our products are subject to current advancement, therefore we reserve the right for modifications without prior notice.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission of deister electronic GmbH.

deister electronic GmbH reserves the right to make changes to any and all parts of this documentation without obligation to notify any person or entity of such changes.

Dezember 2009 IO/DE/SK/MP

deister electronic GmbH
Hermann-Bahlsen Str. 11
30890 Barsinghausen
Germany
Phone: +49 (0) 51 05 - 51 61 11
Fax: +49 (0) 51 05 - 51 62 17
E-Mail: info.de@deister.com
Web: www.deister.com

1. Technical Data

Dimensions:

mm (inch) W x H x D 278 x 238 x 86 (11 x 9.4 x 3.4)

Weight:

kg (lbs) 2,5 (5.5)

Housing Material:

ABS/PMMA, Al

Protection Class:

IP 65

Operating Temperature:-30 °C...+60 °C
-22 °F...+140 °F**Relative Humidity:**

5 %...95 %, non-condensing

Power Requirement:

12...28 VDC / max. 1 A

Transmission Frequency:865 – 868 MHz (EU) or
902 – 928 MHz (US) or
953 – 956 MHz (JP)**Radiated Transmit Power:**max. 1.6 W E.R.P.
(ETSI EN 302 208) or
max. 2.6 W E.I.R.P.
(FCC Part 15), configurable**Transponder Protocols:**

ISO18000-6 C (EPC Class1 Gen2)

Reading Distance:

in m (ft.) up to 4 (up to 13)

Interface:

RS485 with deBus protocol

Electrical Connection:

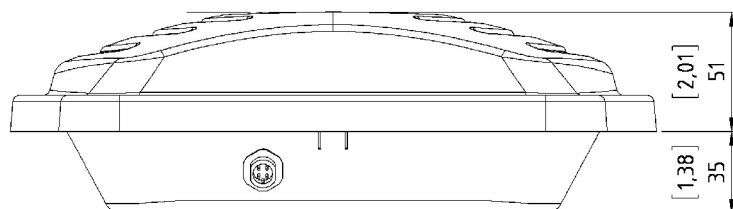
M12-connector with 4 Pins

Conformity:EN 50346
EN 301489
Air interface (EU) EN 302208 v1.2
Air interface (US) FCC Part 15

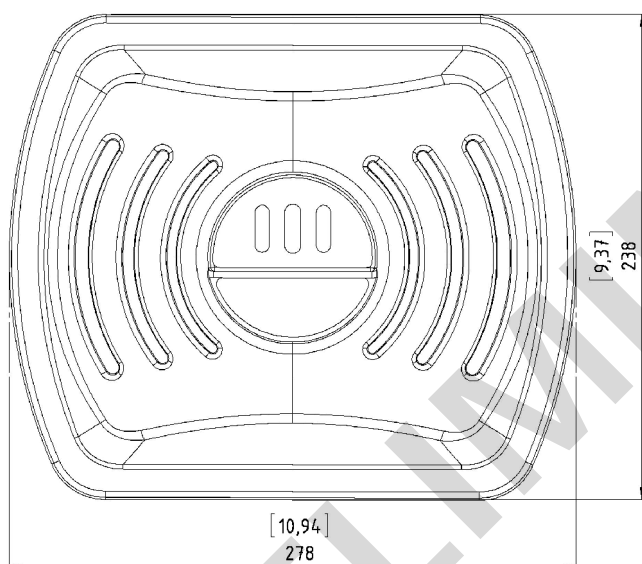
2. Mechanical Dimensions

All dimensions in mm [inches].

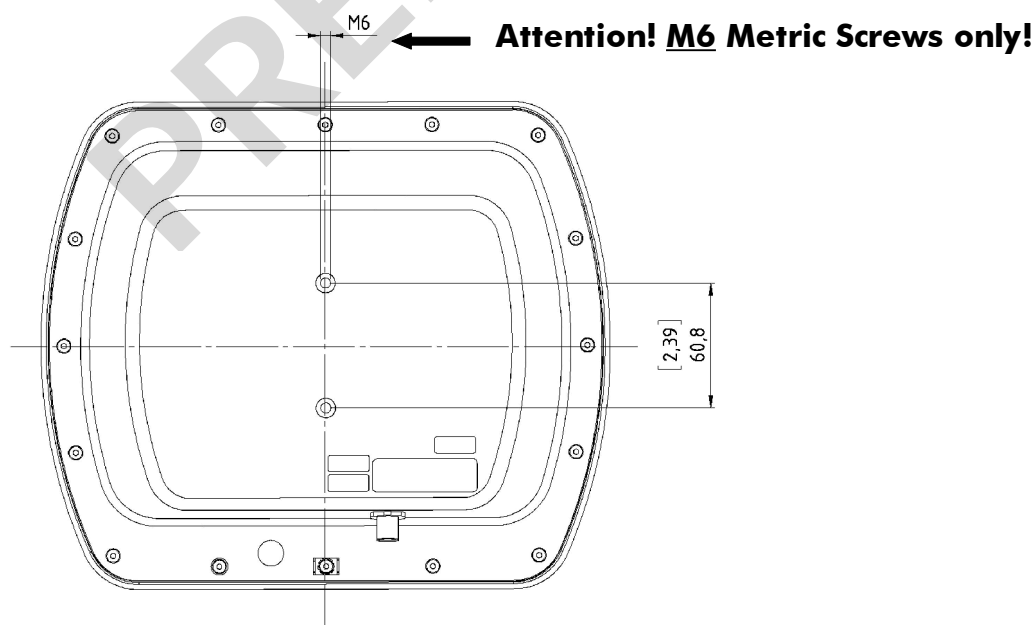
2.1 Side View



2.2 Front View



2.3 Rear View

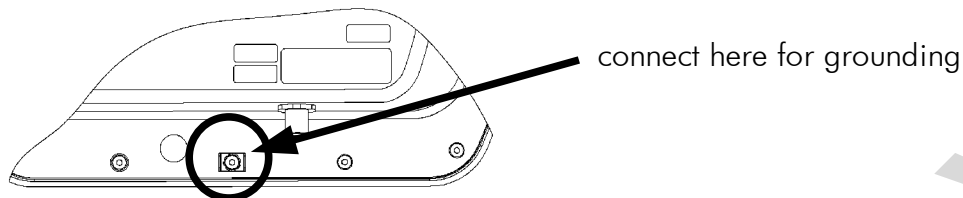


3. Wiring

3.1 Installation Notes

1) Attention:

When installing the reader, make sure the tab connector (as shown) is professionally grounded with a yellow/green, flexible line with at least 0.75 mm² (0.11 inch²) (18 gauge) cross section.

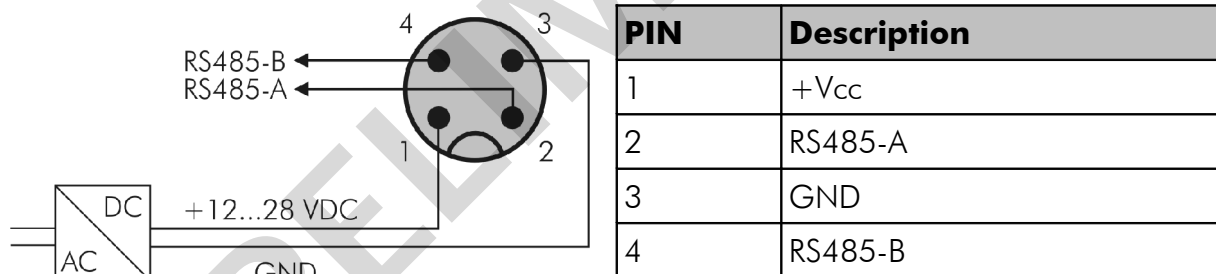


2) Attention:

The TSU25DB has fixed built-in termination resistors which cannot be switched off and is therefore suited for connection not for multi-drop use. It can only be operated at the end of an RS485-bus (Point to Point). If an installation is wanted with more than one TSU25DB on the same bus, a SIC2 is needed. For more information about regarding multiple reader installations with TSU25DB please contact your local sales and service partner.

3.2 Pin Assignment

The TSU25DB has an M12-connector (male) with 4 pins. The pin assignment is as follows:



4. LEDs and Beeper

The standard settings for the LEDs and the beeper are as follows:

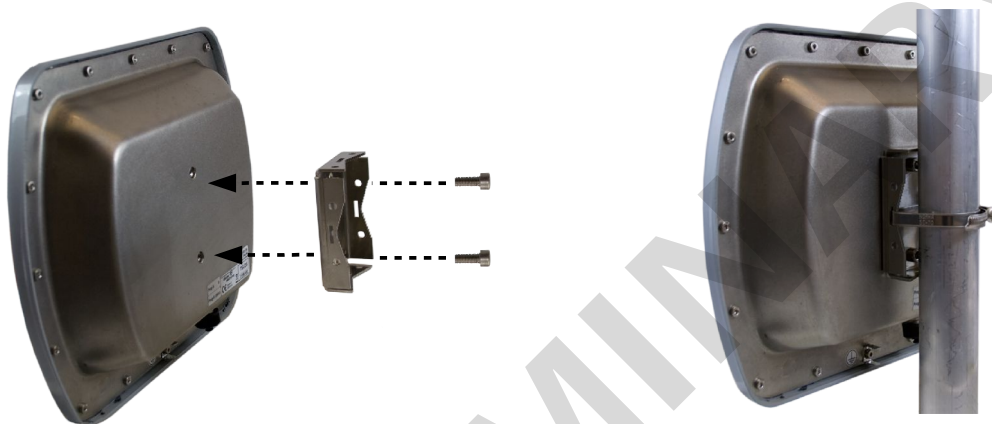
LED/Beeper	Action	Visualisation	Status TSU25DB
Yellow LED	short blinking	●○○○●○○●	field is switched off
	long blinking	●○●○●○●○●	reader is not polled
	constantly on	●●●●●●●●●●	field is switched on
	off for a short time	●●●●○●●●●●	tag read
Green LED	user defined		user defined
Red LED	user defined		malfunction and user defined
Beeper	user defined		user defined

5. Mounting

5.1 Mounting on poles and pipes

For mounting on poles/pipes you need to fix the base plate for mast mounting LRM3 (optional, see chapter 5.1.1. "Mounting the base plate for mast mounting LRM3") to the back side of the TSU25DB first in order to keep the reader adjustable vertically or horizontally. The serrated back plate of the LRM3 guarantees that the reader can be firmly mounted and adjusted 360° around a pole/pipe. For more flexibility in mounting and adjusting the reader on a poles or pipes we recommend the use of our ball joint bracket LRM1 (optional, see chapter 5.2.1. "Mounting with ball joint bracket LRM1").

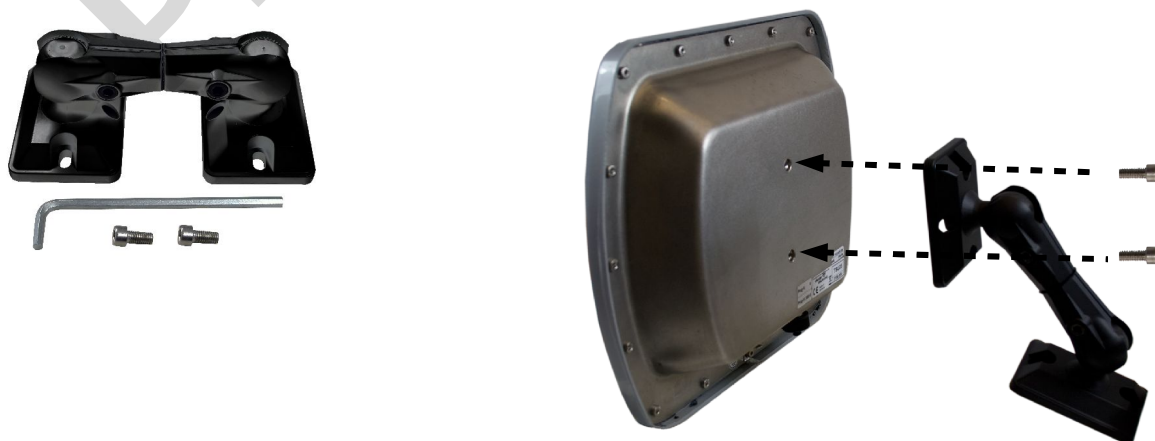
5.1.1 Mounting the base plate for mast mounting LRM3



5.2 Mounting on walls and ceilings

For mounting on walls or ceilings the ball joint bracket LRM1 (optional, see chapter 5.2.1. "Mounting with ball joint bracket LRM1") can be mounted directly onto the back of the reader. This mounting aid allows to adjust the reader in any desired position. Both ends of the ball joint bracket are ball-bearing and connected via a rotatable axis. The desired position can be fixed with an Allen wrench.

5.2.1 Mounting with ball joint bracket LRM1



5.3 Function Principle and Environmental Influences

The reader sends a high-frequent carrier signal. A transponder which is located within the area of this transmitted carrier transmits the signal back with its own transponder data in a modulated way. This very weak signal is being analyzed by the reader.

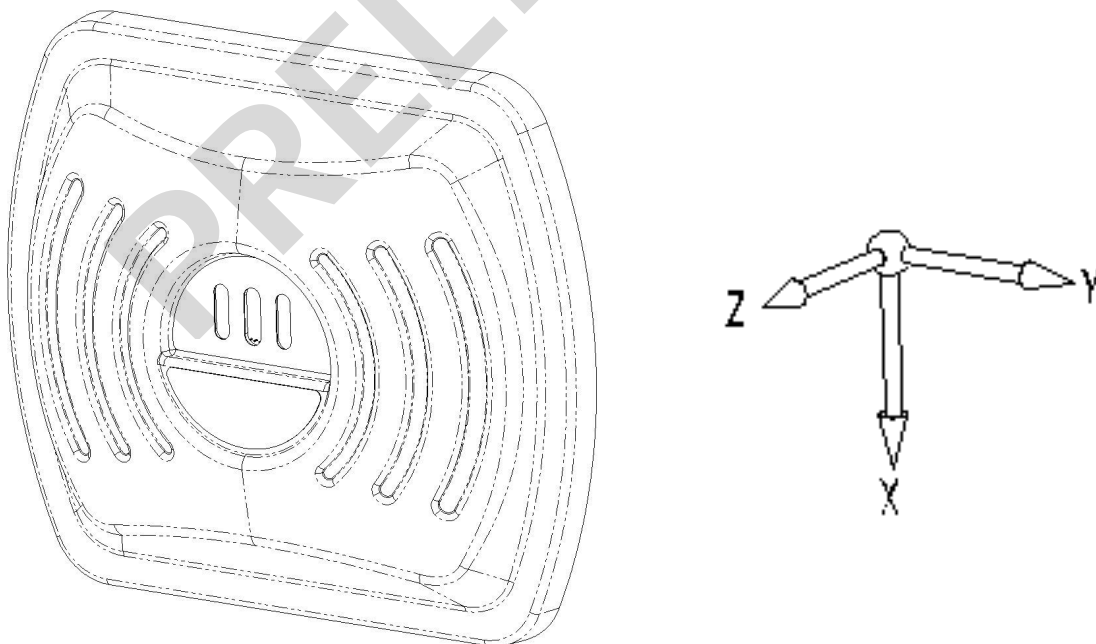
Because of the particular small-bandwidth and the high carrier frequency within MHz-range this system is almost fail-safe. Nevertheless the range of the reader can be negatively influenced. The following list shows what to pay attention to:

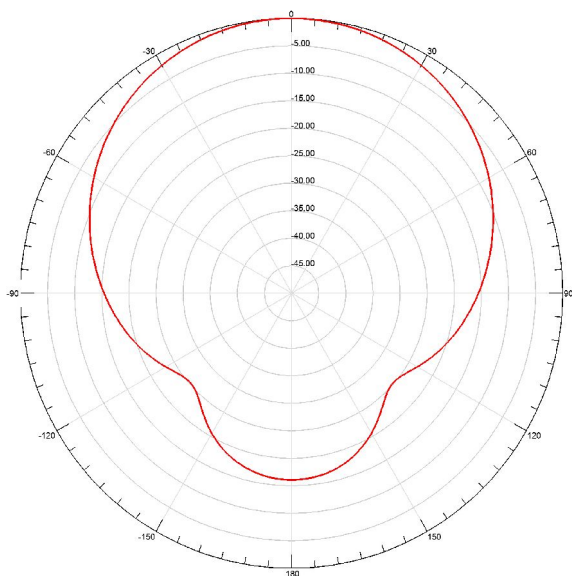
1. The reader must have visual contact to the transponder. **There must not be any walls or other devices between reader and transponder.** Reading through plastic film, card board, papers or glass windows may be possible in some cases, but will reduce the reading range depending on the condition of the material.
2. **Water, ice and snow will absorb the carrier signal.** Therefore the installer should take care, that the front of the reader as well as the transponder can not be covered with water, ice or snow.
3. Reflexions within the surrounding of the reader can influence the reading result in a negative way. Therefore the reader should be mounted as free-standing as possible. **We strictly discourage from sunk-in installations.**

5.4 Radiation Patterns of the Transmitting Antenna

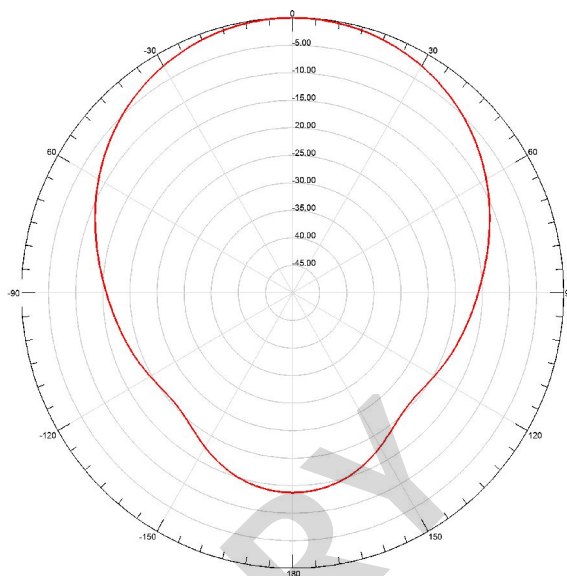
5.4.1 Cutting Plane Diagram

The following diagram shows a perspective view of the TSU25DB in order to help assigning the following cutting planes to the orientation of the reader within space.

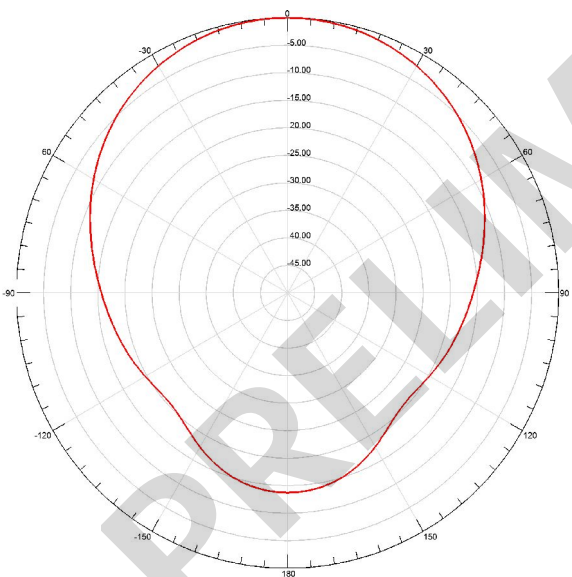




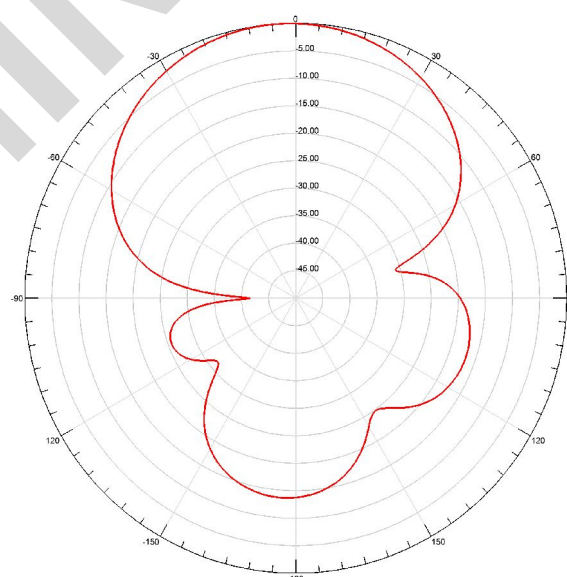
cutting plane: xz
polarization: vertical



cutting plane: yzx
polarization: vertical



cutting plane: xz
polarization: horizontal



cutting plane: yz
polarization: horizontal

6. Configuration

Configuration of the device is done in the “tranSpeed Config” software. If the device is operated via an IDC, configuration is done in the “tranSpeed Commander” Software.

7. Accessories

Article	Description	Article No.
CC2	Connection cable, grey, 3 m, M12 female connector, straight, 4-pin	9287.101
CC4	Connection cable, grey, 3 m, M12 female connector, straight, 4-pin to 4-pin Phoenix connector	9287.301
CC4	Connection cable, grey, 10 m, M12 female connector, straight, 4-pin to 4-pin Phoenix connector	6236.000
LRM1	Ball joint bracket	6103.000
LRM3	Base plate for mast mounting	6106.000
AC/DC power supply Euro	Power supply for expansion module, input voltage 230 VAC, output voltage 12 VDC (1 A), Friwo® plug	8812.000
AC/DC power supply International	Power supply, input voltage 100-230 VAC, incl. adapter for USA/Japan and United Kingdom, output voltage 12 VDC (1.25 A), Friwo® plug	6757.000
AC/DC Power Supply	Power supply for c-rail mounting, input voltage 90-260 VAC, 50-60 Hz output voltage 24 VDC (2.5 A)	6756.000
SNG3 Smart Network Gateway	Interface converter USB-to-RS485, incl. USB interface cable, power supply with standard deister power supply 12 VDC, Friwo® plug	8782.000
DBC	deBus Converter, Interface converter for deBus components, power supply 10-30 VDC	6232.000
IDC	Controller for the connection to deBus-readers power supply 10-30 VDC	6230.000
SIC1	Serial Interface Converter from RS485/deBus protocol to Open Collector/Wiegand, Dataclock, Magstripe protocol, power supply 10-30 VDC	6233.000
SIC2	Serial Interface Converter from RS485/deBus protocol to RS485/customized protocol, power supply 10-30 VDC	6234.000
SIC3	Serial Interface Converter from RS485/deBus protocol to RS232, power supply 10-30 VDC	6235.000

Table 1: Accessories for TSU25DB

Notes:

20 horizontal lines for notes

PRELIMINARY

Germany:

deister electronic GmbH
Hermann-Bahlsen Str. 11
30890 Barsinghausen
Tel.: +49 (0) 51 05 - 51 61 11
Fax: +49 (0) 51 05 - 51 62 17
info.de@deister.com

www.deister.com

Benelux:

deister electronic office
Business Park E 19
Battelsesteenweg 455/A
2800 Mechelen
Tel.: +32 (0) 15 - 28 09 68
Fax: +32 (0) 15 - 28 09 71
info.be@deister.com

France:

deister electronic france
101 rue Pierre Semard
92320 Chatillon
Tel.: +33 (0) 1 47 - 35 78 78
Fax: +33 (0) 1 47 - 35 92 59
info.fr@deister.com

Great Britain:

deister electronic (UK) Ltd.
Stapleton Way, Enterprise Park
Spalding, Lincolnshire
PE11 3YQ
Tel.: +44 (0) 1775 - 717100
Fax: +44 (0) 1775 - 717101
info.uk@deister.com

The Netherlands:

deister electronic office
Tolnasingel 3
2411 PV Bodegraven
Tel.: +31 (0) 1726 - 32970
Fax: +31 (0) 1726 - 32971
info.nl@deister.com

Canada:

Deister Electronics Inc.
4-1550 Kingston Road,
Suite 1411
Pickering, Ontario,
Canada L1V6W9
Tel.: +1 905 - 837 5666
Fax: +1 905 - 837 0777
info.ca@deister.com

Japan:

deister electronic Japan, LTD.
Toshiba Hoshikawa Bldg. 4F
2-4 Kawabe-chô
Hodogaya-ku, Yokohama-shi
Kanagawa, 240-0001
Tel.: +81 (0) 45 340 1831
Fax: +81 (0) 45 340 1801
info.jp@deister.com

USA:

Deister Electronics USA, Inc.
9303 Grant Avenue
Manassas, VA 20110
Tel.: +1 703 - 368 2739
Fax: +1 703 - 368 9791
info.us@deister.com