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CTC II – Compact Test Computer II

Roller Interface Module

Installation Instructions

Intended only for the servicing and installation of the CTC II and the Roller Interface Module

VDO

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Roller Interface Module • Edition 01/2009

Document History

Date	Chapter/ page	Topic, revision, action taken
01/2009		First edition

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Table of Contents

Pictograms and what they mean

The following pictograms are used in this manual to make you aware of a particular circumstance or association.

Condition

This denotes conditions which must be fulfilled before you can carry out an action or program command successfully.◄

Tip

This denotes practical tips for installation or for checking system components.◄

Important

This denotes legal regulations or contains explanations about device associations and background knowledge.◄

Caution

This denotes dangers which may cause material damage or injury to persons.

To avoid possible injury to persons, always pay special attention to the note(s) pertaining to this pictogram.◄

The following additional symbols denoting danger are attached to the Roller Interface Module:

Caution!

This denotes dangers which may cause injury to persons. To avoid possible injury to persons, always pay special attention to the note(s) pertaining to this pictogram.◄

Danger!

Electric shock upon contact with voltage-carrying parts when the housing is open. Only authorised persons may open the housing.◄

For your safety

Important

Before installing and using the Roller Interface Module, please read the safety and operating instructions in this Chapter carefully.

Protect yourself and prevent damage to the test device and tachograph components. ◄

Personnel and technical requirements

Requirements for personnel

The service technician contracted to carry out the installation of the CTC II components must have received specific training in installing CTC II components.

In the following description, the service technician is expected to have

- comprehensive, occupation-specific knowledge and
- to be in complete control of the necessary and relevant tasks.

Technical requirements

To enable the technician to carry out tasks reliably, the premises and equipment must comply with the pertinent legal regulations of the country in which they are used.

General safety instructions

The basic requirement for working safely with the Roller Interface Module and its components is a thorough knowledge of the general instructions, the safety instructions and the safety regulations.

The service technician contracted to carry out the installation of the CTC II components must have read and understood this documentation, including the Chapters on safety.

Caution

Danger! Electric shock upon contact with voltage-carrying parts

The electric equipment in the Roller Interface Module operates by means of dangerous electric voltage.

When the Roller Interface Module is open, it must be switched off – only then may authorised persons carry out work on the module. Remove the key to prevent anyone switching on the module accidentally.◄

Caution

Danger of explosion!

The Roller Interface Module may not be operated in areas which may be endangered by explosions!

Do not use the Roller Interface Module near flammable liquids or gases! ◄

Caution

Danger of accidents!

While working on the module, adhere to the relevant trade association's safety and accident prevention regulations.◄

Caution

Accident danger – rolling road test stand!

Work on the test stand equipment may only be carried out when the Roller Interface Module is switched off. Remove the key to prevent anyone switching on the module accidentally.◄

Notes on operation

Designated use

The Roller Interface Module is a CTC II component. It is used for the inspection, commissioning, and programming of radio slot sized tachographs (EC recording equipment and Non-EC tachographs) on a test stand. The Roller Interface Module may only be used for the purpose for which it was manufactured. The manufacturer is not liable for any damage caused by improper use.

Moisture and dampness

Prevent moisture or dampness from seeping into the module. The Roller Interface Module may not be operated in the proximity of water. Do not place any liquid container (like a tumbler, etc.) on or beside the module – this will avoid any spillage getting into the device.

Environmental requirements

Protect the Roller Interface Module from heat and cold. Do not place the Roller Interface Module near heat sources (e. g. blowers, ovens, etc).
Do not place the test device in direct sunlight.

The ideal environmental temperature is around +25 °C.

Operating instructions

Avoid excessive jolting and shaking of the module.

Cleanliness

Prevent dust and dirt from getting into the module.

Fitting instructions

Power supply

The Roller Interface Module may only be connected to the voltages stipulated in this Installation Manual; see *Chapter entitled "Technical data"* on *Page 34*.

Important

The power supply installation must be carried out by an electrician.◄

Connection cables

When laying the cables, make sure that no one can stumble over them and that no damage to the cables can be caused by other objects or by the effects of heat.

Caution

Danger of short-circuits!

Damaged cables can cause short-circuits, adverse effects and malfunctions.

Replace damaged cables immediately! ◄

Accessories

No modifications to accessories may be made (EMC regulations). Never use accessories which have not been recommended by the manufacturer – they can cause accidents and operational disruptions.

Important

The use of non-authorised accessories invalidates the CE certificate of conformity!◄

Notes on the sealing of the Roller Interface Module

If sealing is required, the following sealing may be carried out for the Roller Interface Module:

- Sealing of the housing cover.

Important

Always adhere to your country's valid legal regulations!◄

Notes on commissioning the test stand

Important

This equipment may only be commissioned if the regulations pertaining to the technical equipment and materials **in their currently valid versions** are adhered to and national safety warnings are put up at the workplace/ rolling road test stand.

1) The following warning notice must be put up in a highly visible location: "**Noise Zone, Wear Hearing Protection**".

2) The following sign measuring 200 x 300 (or 350) must be put up in a highly visible location:

   "**During measuring, entry to the pit is forbidden**".

   Supplier: Fa. Klar
   Neuer Weg 12-16
   D - 42111 Wuppertal

3) The cover plate of the rollers and projecting parts like light barriers, etc. must be visibly flagged with a danger sign (yellow/black paint):

   Supplier: Fa. Klar
   Neuer Weg 12-16
   D - 42111 Wuppertal

The operator is responsible for adherence to all valid safety regulations and safety precautions.◄

Product overview

Connection overview

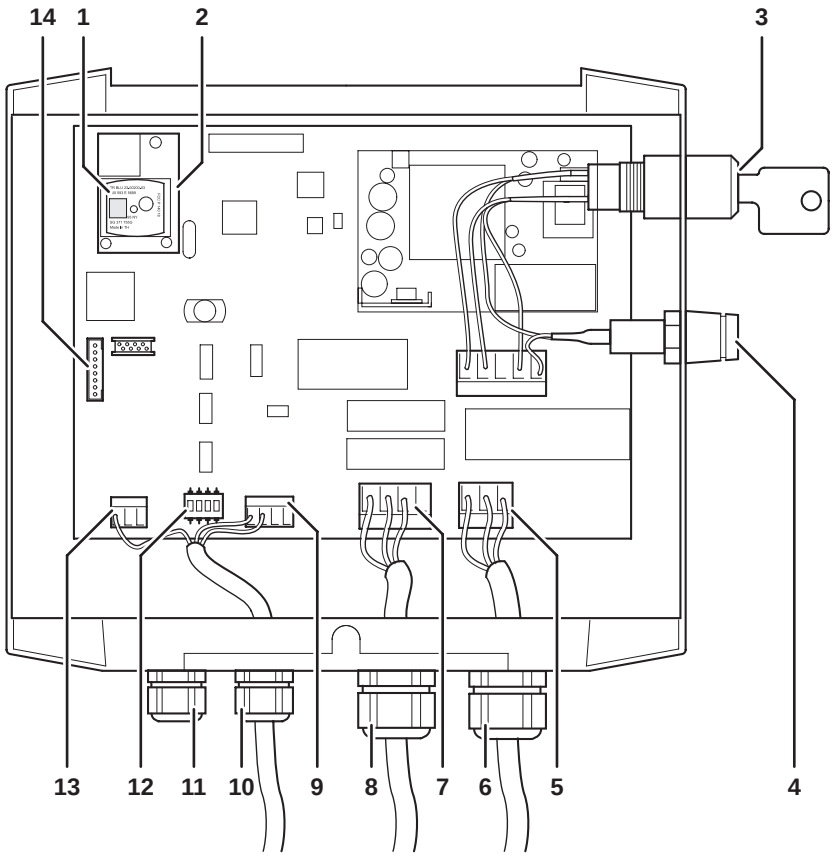


Fig. 1: Connection overview

1 Bluetooth address of the Roller Interface Module

2 Bluetooth module

3 Key switch

4 Fuse

5 Power connection; see the *Chapter entitled "Connection J1 – Power supply"* on *Page 12*

6 Power connection (screw connection)

7 Lifting bar connection; see the *Chapter entitled "Connection J2 – Magnetic valve for lifting bar"* on *Page 13*

8 Lifting bar (screw connection)

9 Roller sensor connection; see the *Chapter entitled "Connection J3 – Roller sensor"* on *Page 14*

10 Roller sensor (screw connection)

11 Light barrier (screw connection)

12 Hardware prescaler; see the *Chapter entitled "Hardware prescaler SW1"* on *Page 19*

13 Light barrier connection; see the *Chapter entitled "Connection J4 – Light barrier"* on *Page 15*

14 Optional trailing cable interface; see the *Chapter entitled "Connection J13 – Trailing cable interface (optional)"* on *Page 16*

Package contents

- The connection cables for the roller sensor and the light barrier are **20 m in length**.
- Communication between the CTC II and the Roller Interface Module takes place via Bluetooth (wireless).
- The power connection is not fixed to the device (not supplied).

Important

The power supply installation must be carried out by an electrician.◄

Caution

Danger of short-circuits!

No protective earth conductor is connected to the magnet valve of the lifting bar.

The protective earth conductor must be externally connected to the double roller set. Ensure that earthing is sufficient (cross-section at least 6 mm^2).◄

Connection configuration

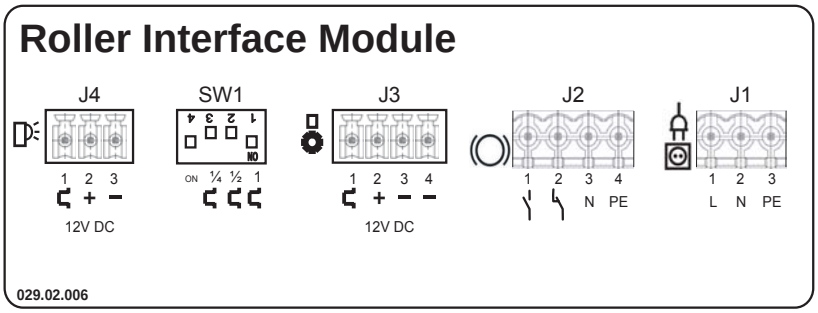


Fig. 2: Terminal assignment– Roller Interface Module

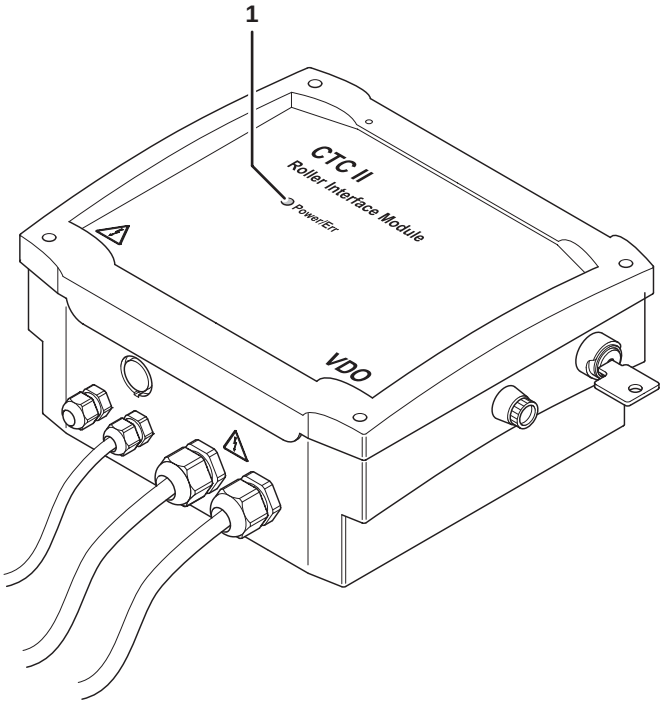
Function	Sign	Terminal	Symbol	Description
J1 Power input		1	L	L 230 V AC
		2	N	N 230 V AC
		3	PE	Protective earth conductor (PE)
J2 Lifting bar		1		L 230 V AC normal open contact (NOC)
		2		L 230 V AC normal closed contact (NCC)
		3	N	N 230 V AC
		4	PE	Protective earth conductor (PE)
J3 Roller sensor		1		Roller sensor signal (white)*
		2	+	12V DC (green)*
		3	-	Earth (brown)*
		4	-	Earth (colourless)*
J4 Light barrier		1		Light barrier signal (white)*
		2	+	12V DC (brown)*
		3	-	Earth (blue)*

* Colour relates to the original sensor cable.

Function	Symbol	Description
SW1 Hardware prescaler	1	Position ON: 1 x sensor frequency
	1/2	Position ON: 1/2 sensor frequency
	1/4	Position ON: 1/4 sensor frequency
	ON	**Always** in ON position in normal operation

Operating status of the Roller Interface Module

The operating status of the Roller Interface Module is displayed by means of a LED **(1)**.



Colour	Meaning
green	The CTC II and the Roller Interface Module are connected via Bluetooth.
green, flashing	The Roller Interface Module is waiting to connect with the CTC II.
red	Communication error with the Bluetooth module, e. g. Bluetooth module is not responding. To rectify the error, switch the Roller Interface Module off, then on again.
red, flashing	Protocol error between CTC II and the Roller Interface Module: The Roller Interface Module breaks the connection with the CTC II after some time and waits for a connection to be established by the CTC II

Installing the Roller Interface Module

Condition

When choosing a location to mount the Roller Interface Module, please note the following:

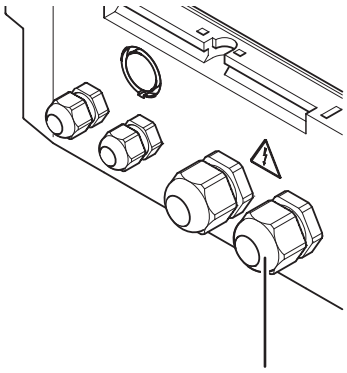
- The ideal environmental temperature is between +0 °C and +40 °C.
- The power supply installation must be carried out by an electrician.◄

Caution

Check the supply voltage before connecting and commissioning the Roller Interface Module.

The system is factory-set at an input voltage of 100 to 240 V.◄

Installing connections



1 Loosen screw connection (1).

2 Push the end of the cable through the union nut, the washer and the cable assembly into the housing interior.

3 Connect the wires as described in the connection diagram.

4 Tighten screw connection (1) and secure the cable.

Connection J1 – Power supply

Connection diagram

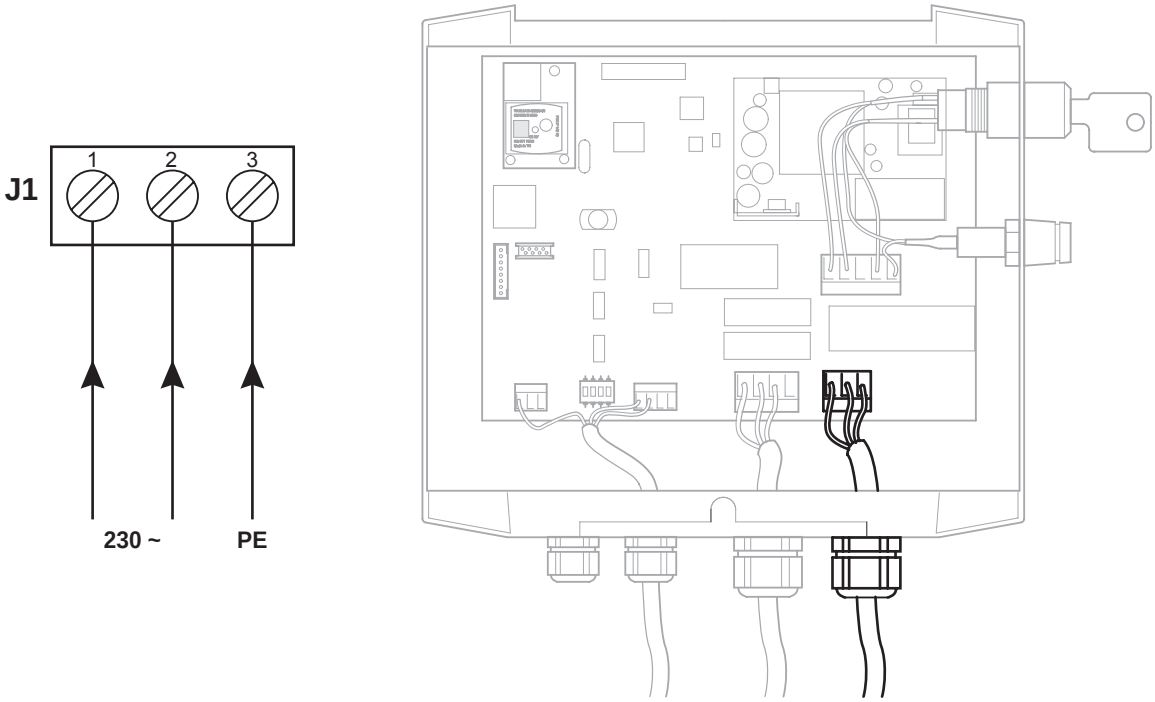


Fig. 3: Connection diagram plug J1, power supply

Captions

Roller Interface Module – J1, terminal	Function	Crosssection
1	L	1 mm^2
2	N	1 mm^2
3	PE	1 mm^2

Connection J2 – Magnetic valve for lifting bar

Connection diagram

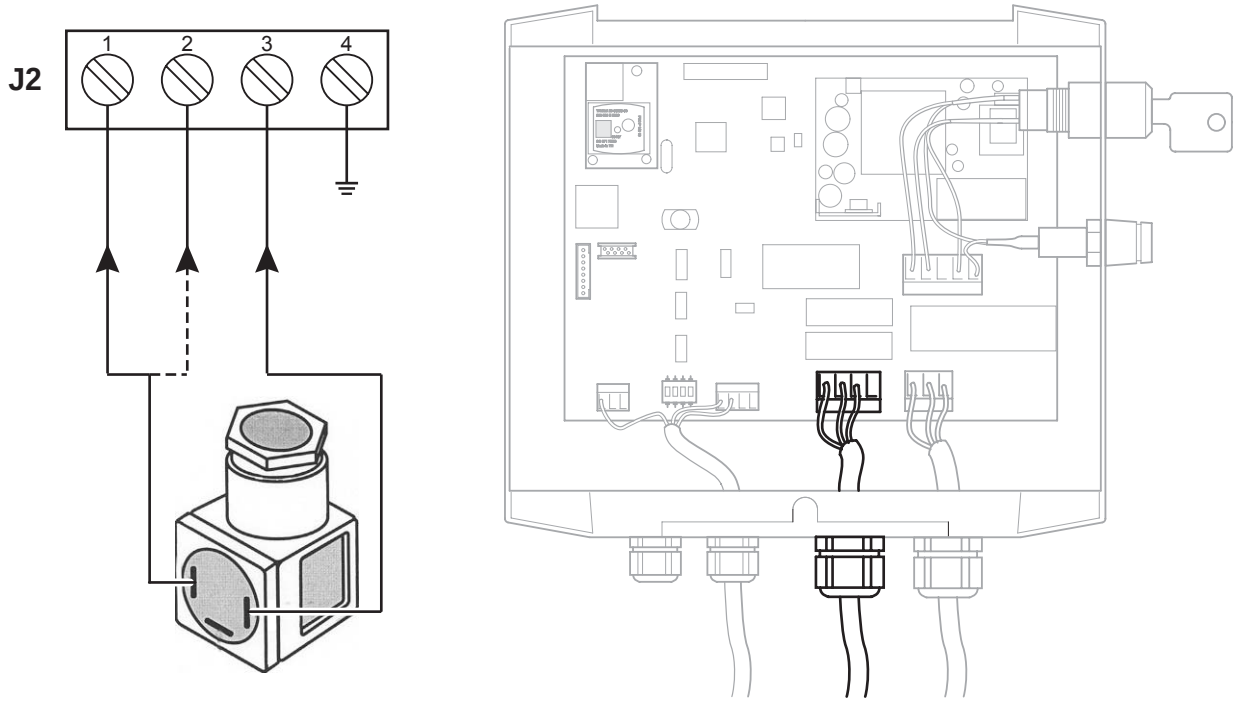


Fig. 4: Connection diagram plug J2, lifting bar

Captions

Roller Interface Module – J2, terminal	Function	Crosssection
1	Control voltage (L) for pneumatic valve (230V AC, normal open contact (NOC))	1 mm^2
2	Control voltage (L) for pneumatic valve (230V AC, normal closed contact (NCC))	1 mm^2
3	Control voltage (N)	1 mm^2

Connection J3 – Roller sensor

Important

In the case of double roller sets, the roller sensor and the light barrier can be connected with **one** 7-pole connecting cable.

In the case of brake test stands, the roller sensor may have its own cable.◄

Connection diagram

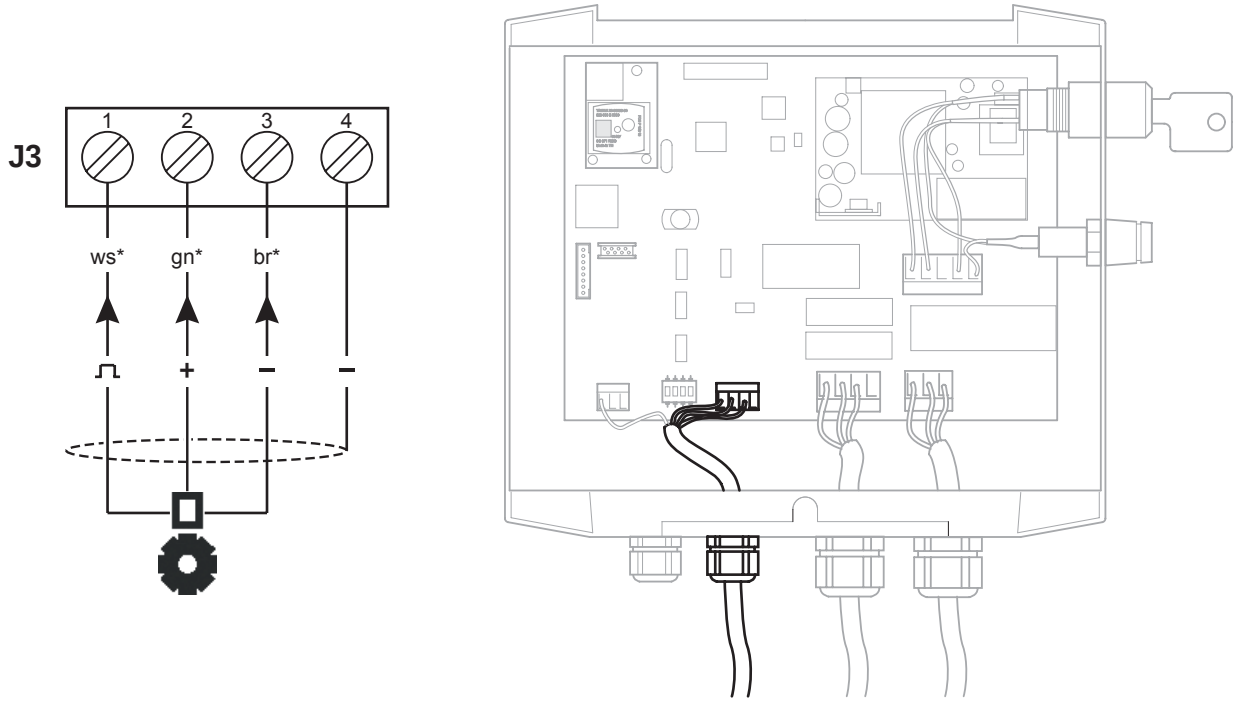


Fig. 5: Connection diagram plug J3, roller sensor

* Colour relates to the original sensor cable.

Captions

Roller Interface Module – J3, terminal	Function	Crosssection
1	Roller sensor signal	0.15 mm^2
2	12 V DC (+)	0.15 mm^2
3	Earth (-)	0.15 mm^2
4	Earth (-)	0.15 mm^2

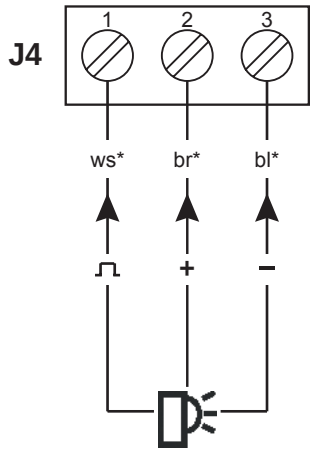
Connection J4 – Light barrier

Important

In the case of double roll sets, the roller sensor and the light barrier can be connected with **one** 7-pin connecting cable.

In the case of test benches for brakes, the light barrier may have its own cable.◄

Connection diagram



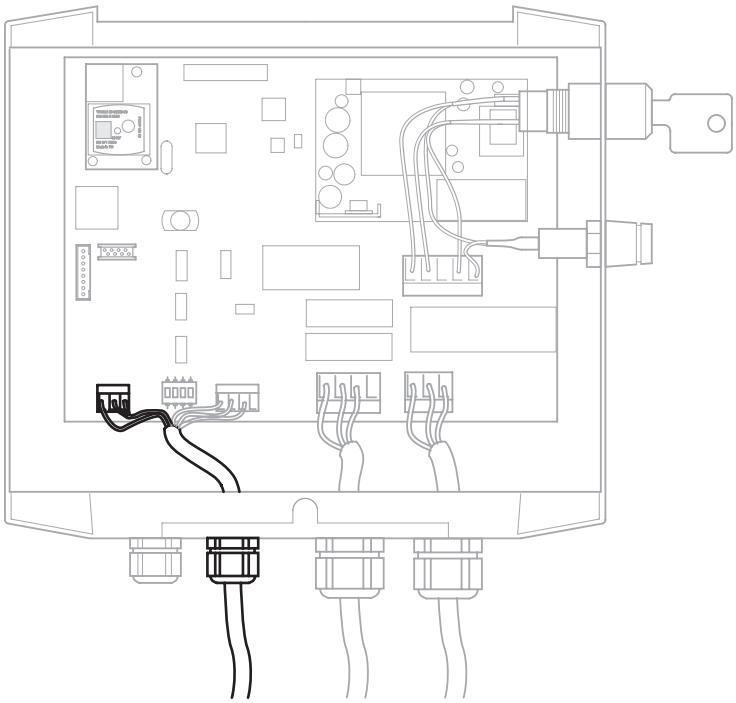


Fig. 6: Connection diagram plug J4, light barrier

* Colour relates to the original sensor cable.

Captions

Roller Interface Module – J4, terminal	Function	Crosssection
1	Light barrier signal	0.15 mm^2
2	12 V DC (+)	0.15 mm^2
3	Earth (-)	0.15 mm^2

Connection J13 – Trailing cable interface (optional)

Important

Communication between the CTC II and the Roller Interface Module normally takes place via Bluetooth (wireless).

If wireless communication is not possible due to strong interference at the test stand, a trailing cable can be used to change to serial connection; also see the *Chapter entitled "Configuring communication via a trailing cable"* on *Page 31*.◄

Important

To install the trailing cable connection (serial connection cable), a press cut must be broken out of the Roller Interface Module's housing. If the press cut is broken out unnecessarily, the protection class of the Roller Interface Module will be affected.

Check whether or not the Bluetooth module has to be replaced basing the check on the operating status of the Roller Interface Module as well as the field strength displayed at the CTC II; see the *Chapters entitled "Operating status of the Roller Interface Module"* on *Page 10* and *"Checking field strength"* on *Page 29*.◄

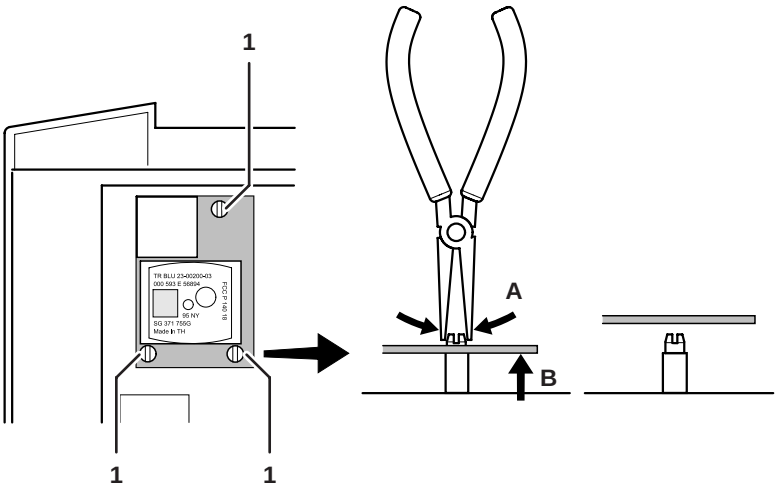
Condition

You have a Bluetooth Replacement Set available.

The Bluetooth Replacement Set consists of

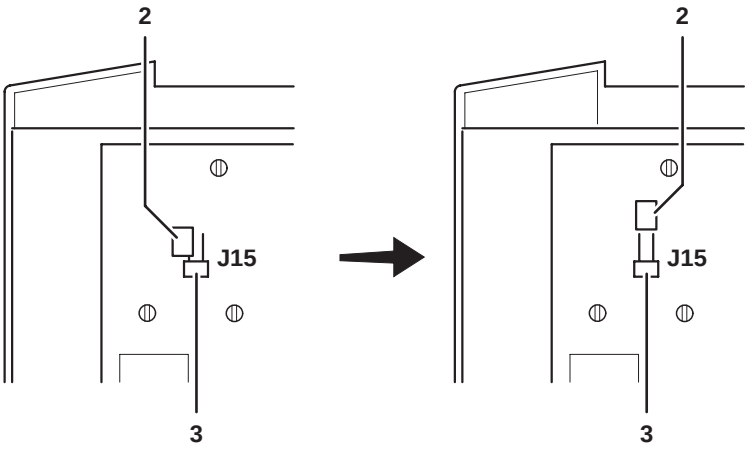
- a connection cable with an 8-pin plug connection and an interface for the trailing cable with a union nut, and
- 20 m of trailing cable.◄

To install the connection for the trailing cable:

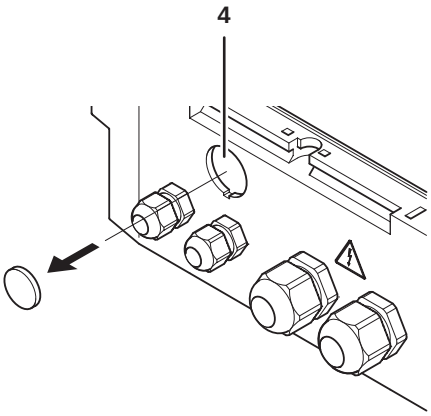


1 Remove the Bluetooth module from the spacer bolts:

- **Press the three spacer bolts (1) on the Bluetooth module together (one after the other) using pliers (A) and**
- **remove the Bluetooth module from the spacer bolts (B).**



2 Close the J15 contact (3) with the jumper (2).



3 Break the press cut (4) (for feeding through the interface for the trailing cable) out of the housing (e. g. using a screwdriver).

4 Push the trailing cable interface through the opening from the inside.

5 Secure the trailing cable interface using the union nut.

6 Plug the connection cable plug into the J13 8-pin plug connector (see Pos. (14), *Fig. 1* on *Page 7*).

The trailing cable connection has now been installed in the Roller Interface Module. The trailing cable to the CTC II can now be connected.

Caution

When laying the cables, make sure that no one can stumble over them and that no damage to the cables can be caused by other objects or by the effects of heat.◄

Hardware prescaler SW1

The Roller Interface Module can work with a pulse count of between 0.2 and 5 cm/imp. Higher resolution roller sensor signals can be adjusted by means of a hardware prescaler.

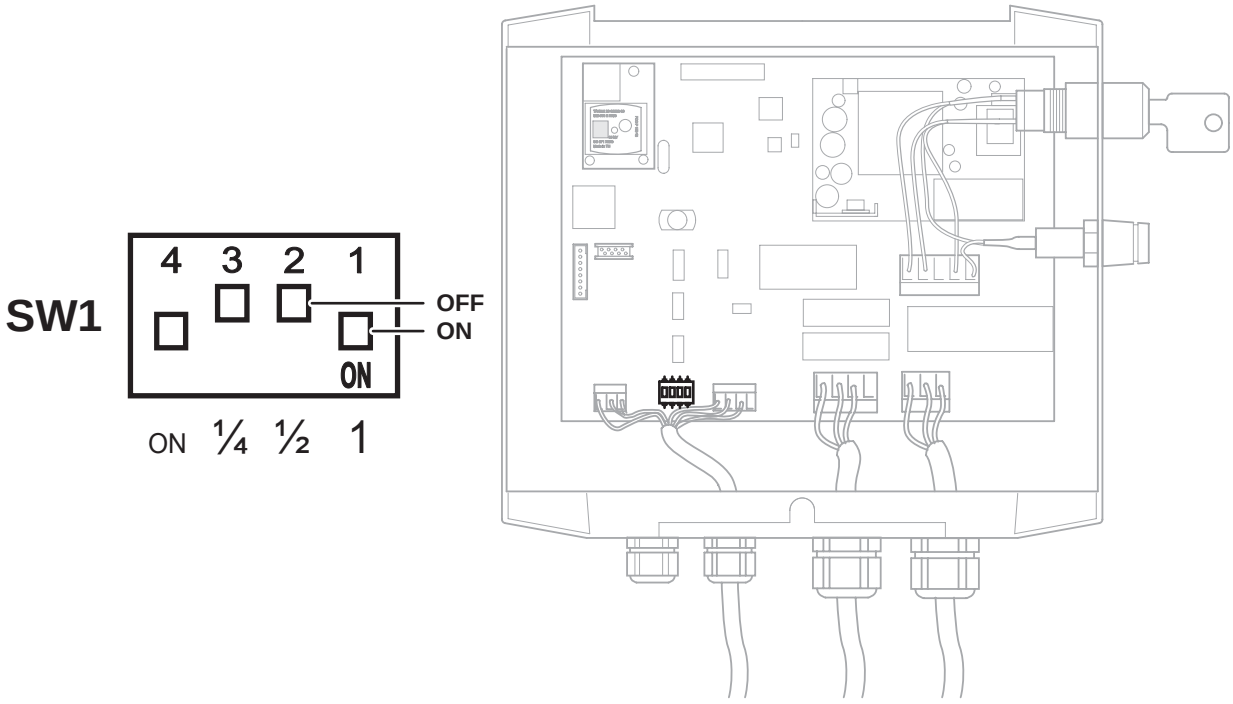


Fig. 7: Hardware prescaler SW1

Switch	Prescaler setting
1	Position **ON**: 1 x sensor signal (frequency) Position **OFF**: no sensor pulses
2	Position **ON**: 1/2 x sensor signal (frequency) Position **OFF**: no sensor pulses
3	Position **ON**: 1/4 x sensor signal (frequency) Position **OFF**: no sensor pulses
4	Position **ON**: The split sensor signal will be forwarded to the CPU (normal operation). Position **OFF**: Firmware Update Mode

Important

Only one of the switches numbered 1 to 3 must be set to the **ON** position – this will ensure correct measurement results.

In normal operation, switch 4 must **always** be in the **ON** position.◄

Sealing the Roller Interface Module

Important

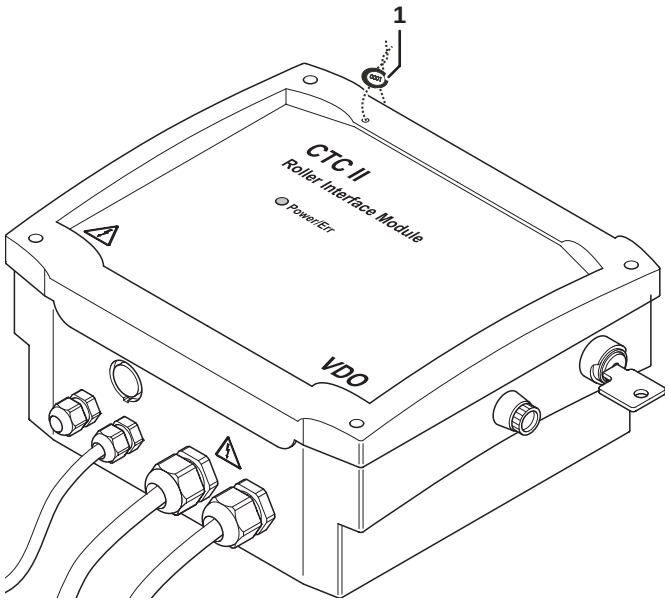
Not every country's legal regulations stipulate that sealing must take place. Always adhere to your country's valid legal regulations!

When sealing, make sure that

- the sealing pliers are adjusted correctly and that the assigned seal number is used.
- the sealing wire is short, making it impossible to open the cover.
- the sealing wire does not cause any short-circuits.

Condition

You have connected all the Roller Interface Module's necessary components.◄



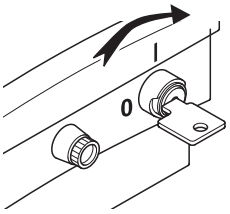
1 Two-hole seal

Switching on the Roller Interface Module

Condition

The Roller Interface Module is connected to the power supply.

The Roller Interface Module's cover is closed; also see the safety instructions on *Page 3*.◄



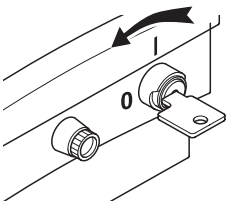
- **Turn the key of the Roller Interface Module clockwise (upwards, to Position “I”).**

  The LED on the Roller Interface flashes green. The Roller Interface Module now attempts to establish a Bluetooth connection with the CTC II.

Important

If the LED turns green, the Roller Interface Module is connected to the CTC II via Bluetooth.◄

Switching off the Roller Interface Module



- **Turn the key of the Roller Interface Module anticlockwise (diagonally, to Position “0”).**

  The Roller Interface Module is now switched off.

Important

Remove the key to prevent anyone switching on the module accidentally.

The key can only be removed in Position “0”.◄

Configuring the CTC II

This Chapter gives you an overview of

- possible CTC II settings for tachograph inspection and
- the CTC II settings for communication with the Roller Interface Module.

CTC II configuration is carried out in the **Service** menu.

Important

The **Service** menu is password-protected. You receive the password directly from the Continental Trading GmbH by e-mail.

Please remember to handle your Roller Interface Module password as carefully as you would handle a cover seal. Make sure that only authorised persons know the password.

Giving the password to unauthorised third parties is expressly forbidden.◄

Important

When configuring the CTC II, always adhere to your country's valid legal regulations!◄

An overview of the “Service” menu

- **CTC Measuring**
  - **Adjustments**
    - Function
    - Language
    - Auto OFF
    - Info
    - **Service**
      - Version
      - Distance roller
        - Distance
      - Settings road
        - Length measuring track
      - Setting roller
        - Test stand type
        - Roller adjustment
          - Auto roller adjustment
          - Roller direct
        - Length measuring track
        - Number wheel turns
        - Min. test speed
        - Max. test speed
      - Communication
        - Bluetooth address
        - Connection
        - Field strength
      - PIN mode
      - System
        - Download Language
        - Clock calibration
        - Load change-over times
        - Calibration mode
          - Automatic measuring track
          - Manual measuring track
          - Variable speed
          - Clock – test
          - L-measurement

An overview of the "Service" menu parameters

Program	Range of values	Remark
Version	Standard/ Belgium/ France/ Italy/ Portugal	
Distance roller	on/ off	Switching on/ off the function for Dist (check on roller distance travelled). When the setting is at **off** the **Distance** parameter cannot be set.
Distance	100 … 10000 m	Entering the test distance for the distance check on the roller Default value: 1000 m
Settings road		
Length measuring track	10 … 1000 m	Entering the length of the measured track Default value: 20 m
Setting roller		
Test stand type	Double roller/ Brake tester/ Brake double	Setting the test stand type
	Double roller (rolling road test stand)	Both wheels of a drive axle are powered. The characteristic coefficient imp/ km is determined from **one** drive axle. The number of drive axles is not requested.
	Brake tester (Brake test stand)	Only one wheel of the drive axle(s) is powered. The number of drive axles is requested (number: 1, 2 or 3). The characteristic coefficient imp/ km is determined from the powered wheel, doubled and multiplied by the number of drive axles.
	Brake double (Brake test stand)	Both wheels of a drive axle are powered. The number of drive axles is requested (number: 1, 2 or 3). The characteristic coefficient imp/ km is determined from the powered wheel and multiplied by the number of drive axles.

Program	Range of values	Remark
Roller adjustment		
Auto roller adjustment	500 … 8000 mm	The circumference of the measuring roller (the roller upon which the roller sensor is mounted) is calculated automatically. For the steps involved in this measuring process, see the *Chapter entitled "Automatic roller adjustment"* on *Page 32*. **Note:** Wheel circumference measurement is always carried out without the correction value (which is set with Corr).
Roller direct		The circumference of the measuring roller (the roller upon which the roller sensor is mounted) and the number of pulses per measuring roller revolution are entered in the CTC II. In the case of the double roller set, a roller circumference of 1000 mm and a pulse count of 100 imp/ rev must be entered.
Roller circumference	100 … 5000 mm	Measuring roller circumference input in mm
Pulses	10 … 999	Input of the imp/ rev of the measuring roller/ number of teeth
Length measuring track	20 … 10000 m	Entering the length of the measured track to determine the W value and the vehicle constants. The default value is predefined by the setting of the test stand type: • 20 m for the brake test stand, • 200 m for the rolling road test stand.
Number wheel turns	3 – 20	Input of the number of wheel turns during wheel circumference measurement (L value) Default value: 10
Min. test speed	1 … 80 km/h	Minimum test speed input The test functions start when roller speed is greater than the minimum test speed. During the test, a cyclical check is carried out to ascertain whether or not the value is under-run. If the value is under-run, the CTC II aborts the test. Default value: 1 km/h
Max. test speed	1 … 80 km/h	Maximum test speed input The test functions start when roller speed is less than the maximum test speed. During the test, a cyclical check is carried out to ascertain whether or not the value is exceeded. If the value is exceeded, the CTC II aborts the test. Default value: 80 km/h

Program	Range of values	Remark
Communication		
Bluetooth address	In accordance with the specifications of the Bluetooth module's manufacturer (hexadecimal)	Input of the Roller Interface Module's Bluetooth address; see Pos. **(1)**, *Fig. 1* on *Page 7*.
Connection	Bluetooth/ Serial	Setting the type of connection to the Roller Interface Module: • Bluetooth: wireless communication • Serial: cabled communication (trailing cable) via serial interface
Field strength	Field strength and error rate CTC II Field strength and error rate Roller Interface Module	Display of the received field strength and the error rate of the Bluetooth connection; see the *Chapter entitled "Checking field strength in the "Service" menu"* on *Page 30*.
PIN mode	off/ PIN direct/ User selection	Setting the PIN mode
	off	Function for entering the PIN of the workshop card via the CTC II is switched off.
	PIN direct	The workshop card PIN can be entered using directly via the CTC II. The PIN is not saved in the CTC II.
	User selection	The workshop card PIN can be entered using and user selection via the CTC II. The workshop card PIN is saved in the CTC II and protected by a 4-digit password. Up to 10 PINs can be saved.
System		
Download Language		CTC II display texts are translated into German, English and French. To load other languages, a text file can be transferred to the CTC II. To do this, the CTC II must be connected to a computer.
Clock calibration		This menu item is only required for CTC II manufacture.
Load change-over times		You can use a data transfer cable to load change-over times for summer and winter to the CTC II. To do this, the CTC II must be connected to a computer.
Calibration mode		The CTC II must be periodically calibrated by a service technician. To do this, the CTC II must be connected to a calibration unit.
Automatic measuring track		
Manual measuring track		
Variable speed		
Clock – test		
L-measurement		

Starting configuration

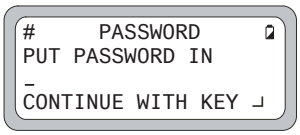
When the CTC II is connected to the vehicle power supply (or when a specific button is pressed in battery operation), the CTC II starts automatically and the initial menu is displayed.

▼, ⌟ **1 Open the “Adjustments” menu.**

▼, ⌟ **2 Open the “Service” menu.**

! Important

The **Service** menu is password-protected. You receive the password directly from the Continental Trading GmbH by e-mail.◄



The Password Entry screen is displayed.

0 … 9, ⌟ **3 Enter the password and confirm.**

! Important

Use the ⇧ button to change from numerical to alphabetical entry.
Press the ◄ button to correct wrong entries.◄

The **Service** menu is displayed.

Connecting the CTC II

Programming the Bluetooth address

Important

The Bluetooth address of the Roller Interface Module is affixed to the Bluetooth module; see the *Chapter entitled "Connection overview"* on *Page 7*.◄

To program the Bluetooth address into the CTC II:

▼, ⌟ **1 Open the "Communication" menu.**

▼, ⌟ **2 Open the "Bluetooth address" menu.**

The saved value is shown in the **Actual** display.

0 … 9, ⌟ **3 Enter the Bluetooth address.**

Important

Use the ⌶ button to change from numerical to alphabetical entry.
Press the ◄ button to correct wrong entries.◄

When programming has been completed, the newly entered value will be shown in the **Actual** display.

c **4 Return to the "Communication" menu.**

5 Check the connection between the CTC II and the Roller Interface Module; see the *Chapter entitled "Checking field strength"* on *Page 29*.

Checking field strength

When you have programmed the Bluetooth address of the Roller Interface Module, you can use the field strength to check the quality of the wireless connection between the CTC II and the Roller Interface Module.

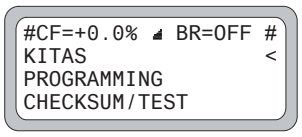
The field strength can be checked

- in the initial menu of the CTC II or
- in the **Service** menu under **Communication > Field strength**.

Tip

A glance at the “Power/Err” LED will tell you whether or not a Bluetooth connection has been established between the CTC II and the Roller Interface Module; see the *Chapter entitled “Operating status of the Roller Interface Module”* on *Page 10*.◄

Checking the field strength in the CTC II's initial menu



The bar in the first display line indicates the quality of the Bluetooth connection. Up to 5 bars are displayed.

The more bars displayed, the better the quality of the Bluetooth connection.

If too many errors occur, the connection is terminated.

Important

During installation of the CTC II, the display in the initial menu outside the vehicle should always show 5 bars – in the **Field strength** menu, it should show a BER value < of 500 (see the *Chapter entitled “What the Field Strength display means”* on *Page 30*), if the CTC II is facing in the direction of travel.◄

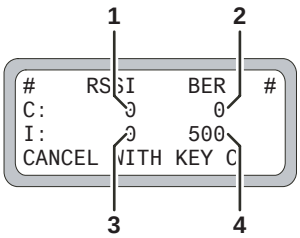
Important

If the connection between the CTC II and the Roller Interface Module is malfunctioning, # **NO CONNECTION** # is shown in the display.◄

Checking field strength in the “Service” menu

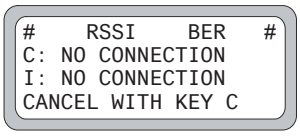
▼, ⌟ **1 Open the “Communication” menu.**

▼, ⌟ **2 Open the “Field strength” menu.**



In the display, the current values are shown for

- the field strength **(1)** and the error rate **(2)** of the CTC II as well as
- the field strength **(3)** and the error rate **(4)** of the Roller Interface Module.



If no Bluetooth connection can be established between the CTC II and the Roller Interface Module, the adjoining display will be shown.

c **3 Return to the “Communication” menu.**

What the Field Strength display means

Field	Range of values	Meaning
RSSI	-32786 … 0	The value indicates the received signal strength indication (RSSI): 0: Signal is being received in very good quality. -32786: no connection
BER	0 … 3000	This value indicates the bit error rate. In the initial menu of the CTC II, the value for the CTC II is indicated by the bar display ▟: 5 bars: 0 <= BER < 500 4 bars: 500 <= BER < 1000 3 bars: 1000 <= BER < 1500 2 bars: 1500 <= BER < 2000 1 bar: 2000 <= BER < 3000 BER >= 3000: Connection is terminated. The “Power/Err” LED on the Roller Interface Module indicates the quality of the connection: LED lights green: Connection has been established. LED flashes red: Error rate is too high, connection is terminated.

Configuring communication via a trailing cable

✓ **Condition**

You have replaced the Bluetooth module with the trailing cable interface connection; see the *Chapter entitled "Connection J13 – Trailing cable interface (optional)"* on *Page 16*.

The CTC II and the Roller Interface Module are connected via Bluetooth.◄

To program communication in the CTC II via a trailing cable:

▼, ⏎ **1 Open the "Communication" menu.**

▼, ⏎ **2 Open the "Connection" menu.**

The saved value is shown in the **Actual** display.

+ / -, ⏎ **3 Change the connection to "serial".**

When programming has been completed, the newly entered value will be shown in the **Actual** display.

C **4 Return to the "Communication" menu.**

Automatic roller adjustment

In automatic roller adjustment, the roller adjustment value (distance of the measuring roller per electric pulse in cm/imp) is calculated using a reference vehicle.

The steps involved in automatic roller adjustment

- Measurement of wheel circumference on the road.
- Entering of “Wheel Circumference Road” in the CTC II.
- Measurement of wheel circumference on the test stand.
- Calculation (with display) and saving of the roller adjustment value (distance of the measuring roller per electric pulse in cm/imp).

! Important

Carry out the automatic roller adjustments with a typical test vehicle (with the largest possible wheels).◄

! Important

The following test sequences are written in a easily comprehensible style.◄

Measurement of wheel circumference on the road

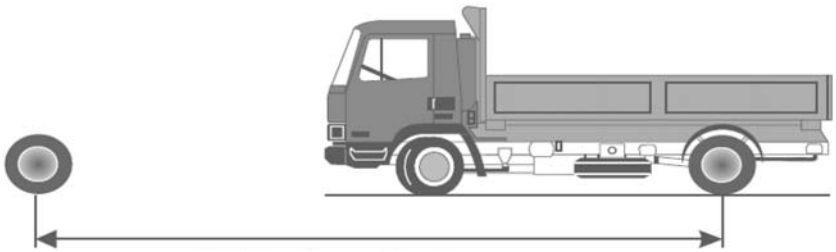


Fig. 8: Measurement of wheel circumference on the road

1 Park the unloaded vehicle on a level road.

2 Determine the wheel perpendicular at the drive wheel and chalk-mark both wheel and road.

3 Move the vehicle 10 wheel revolutions forwards at walking speed.

4 Use a measuring tape to measure the distance covered and divide this value by 10.

Preparing measurement of wheel circumference on the test stand

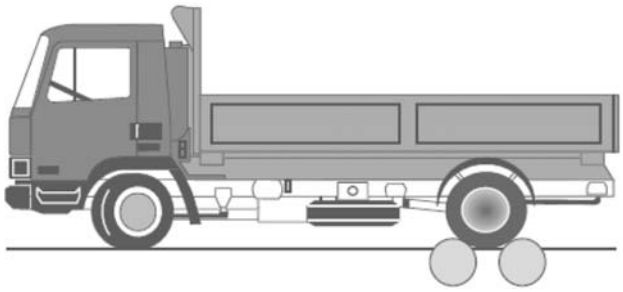


Fig. 9: Measurement of wheel circumference on the test stand

1 Drive the vehicle with the drive axle on to the rollers.

2 On the light barrier side, affix reflecting strips on the wheel.

Calculation of the roller adjustment value with the CTC II

1 Open the “Service” menu; see the *Chapter entitled “Starting configuration”* on *Page 27*.

▼, ⌟ **2 Open the “Setting roller” menu.**

▼, ⌟ **3 Open the “Roller adjustment” menu.**

▼, ⌟ **4 Open the “Auto roller adjustment” menu.**

0 … 9, ⌟ **5 Enter the wheel circumference determined on the road and confirm.**

6 Bring the vehicle up to test speed, or drive the measuring roller.

⌟ **7 Start wheel circumference measurement on the roller.**

The CTC II ends the measurement independently. The CTC II automatically calculates the roller adjustment value in X.XXX cm/imp format, based on wheel circumference on the road and on the test stand.

The adjustment value is shown on the CTC II display.

⌟ **8 Confirm the value.**

The adjustment value (distance of the measuring roller per electric pulse in cm/imp) is saved.

Technical data

Power supply	100 … 240V AC ± 10%, 50 Hz, 60 Hz
Overvoltage category	II
Current consumption	max. 1 A
Device fuse	1 A slow
Operating temperature	0 °C … 40 °C
Storage temperature	-20 °C … 70 °C
Humidity	80%, non-condensing
Type of protection	IP 54
Contamination level	II
Dimensions	200 x 180 x 95 mm
Weight	1.5 kg
Switching output for lifting bar/ brakes	Alternating contact, supply voltage, contact load 0.6 A, fused via device fuse
Connections	• Voltage output for sensor supply ⎓ 12V DC ± 15%, 1 A short-circuit-proof • Roller pulse 0.2 … 5 cm/imp (NPN input) • Light barrier for wheel circumference measurement (NPN input)
Correction value setting	± 9.9% in increments of 0.1%
Measuring range constant “W”	2000 … 50000 imp/km
Measuring range constant “L”	300 … 7200 mm
Test speed for “W” and “L”	1 … 60 km/h
Odometer check	100 … 10000 m

Accessories

Accessories/ Options	Article number
Reflecting strips (10)	1601-2100-050-001
Double roller set	1601-22-000-01
Pulse adapter for brake test stand	1601-30-015-00
Light barrier	X12-140-072-001
Universal pulse generator	X12-140-066-001
Bluetooth Replacement Set: • Connection cable with an 8-pin plug connection and an interface for the trailing cable, plus a union nut • 20 m of trailing cable	A2C59512915
Serial connection cable	A2C59512181
CTC II set sender unit test: • Test cable, sender unit test • Operating Instructions, sender unit test	A2C59512170

Acceptance report

Company _____ Device No. _____

Town, Street _____ Telephone Number _____

Represented by Mr./ Ms.

_____

Present at delivery acceptance and explanation of functions

Company _____ Device No. _____

Town, Street _____ Telephone Number _____

The following system groups were installed

_____

_____

_____

_____

Briefing of the person responsible in all system functions

_____

_____

_____

_____

Delivery of system-related accessories

_____

_____

_____

_____

Remarks, discussions, open issues

_____

_____

_____

_____

The equipment was demonstrated and handed over in functional condition. The operator is familiar with the required safety precautions at the workplace/ rolling road (descriped overleaf) and hereby affirms that he/ she will implement these and adhere to them.

Town, Date

Contract Awarder, Operator Contractor

The operator is responsible for adherence to all valid safety regulations and safety precautions.

This equipment may only be commissioned if the regulations pertaining to the technical equipment and materials in their currently valid versions are adhered to and national safety warnings are put up at the workplace/ rolling road test stand.

1. The following warning notice must be put up in a highly visible location:
   "**Noise Zone, Wear Hearing Protection**".

2. The sign measuring 200 x 300 (or 350) must be put up in a highly visible location:

   "During measuring, entry to the pit is forbidden"

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   Neuer Weg 12-16
   D - 42111 Wuppertal

3. The cover plate of the rollers and projecting parts like light barriers, etc. must be visibly flagged with a danger sign (yellow/black paint).

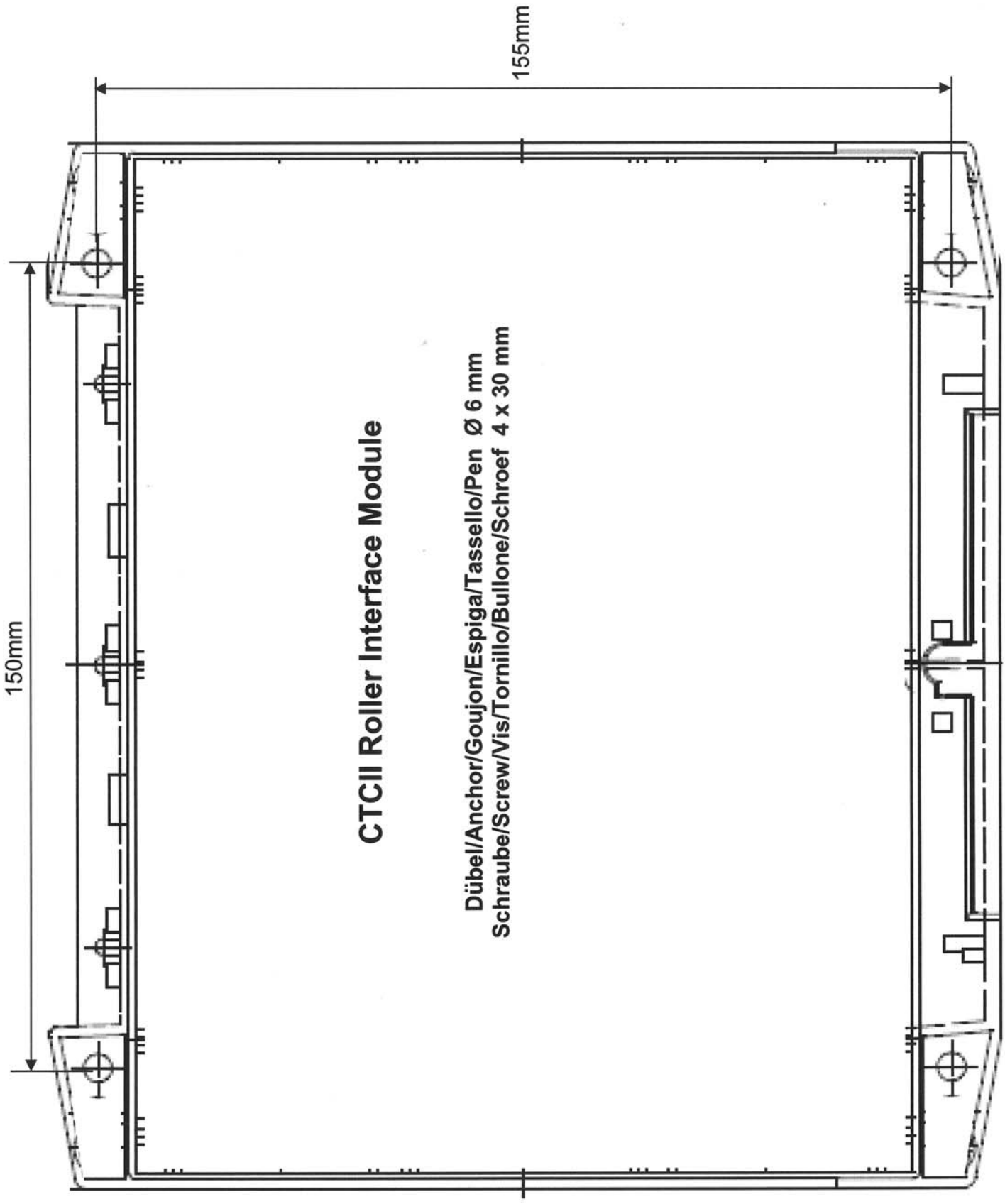
   Supplier: Fa. Klar
   Neuer Weg 12-16
   D - 42111 Wuppertal

Important notes

1. The operator is obliged to inform the company who installed the plant in writing as soon as he has fulfilled the required safety precautions.
2. Please note the change to accident prevention regulations.

Edition: April 1992

Appendix – Drilling jig for wall mounting



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