

Service Information

Tachographs, Telematics & Services

Internal use only!

To: Technical managers / Service technicians

SI-No.: 116348

Contact: Your responsible subsidiary

18.03.2020

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Product / System: M1 N1 Adapter Kit

Belonging to: Service Diagnose Systeme

Keywords: 116348, M1N1 Adapter, DTCO 4.0

Internet:



<http://www.fleet.vdo.de>

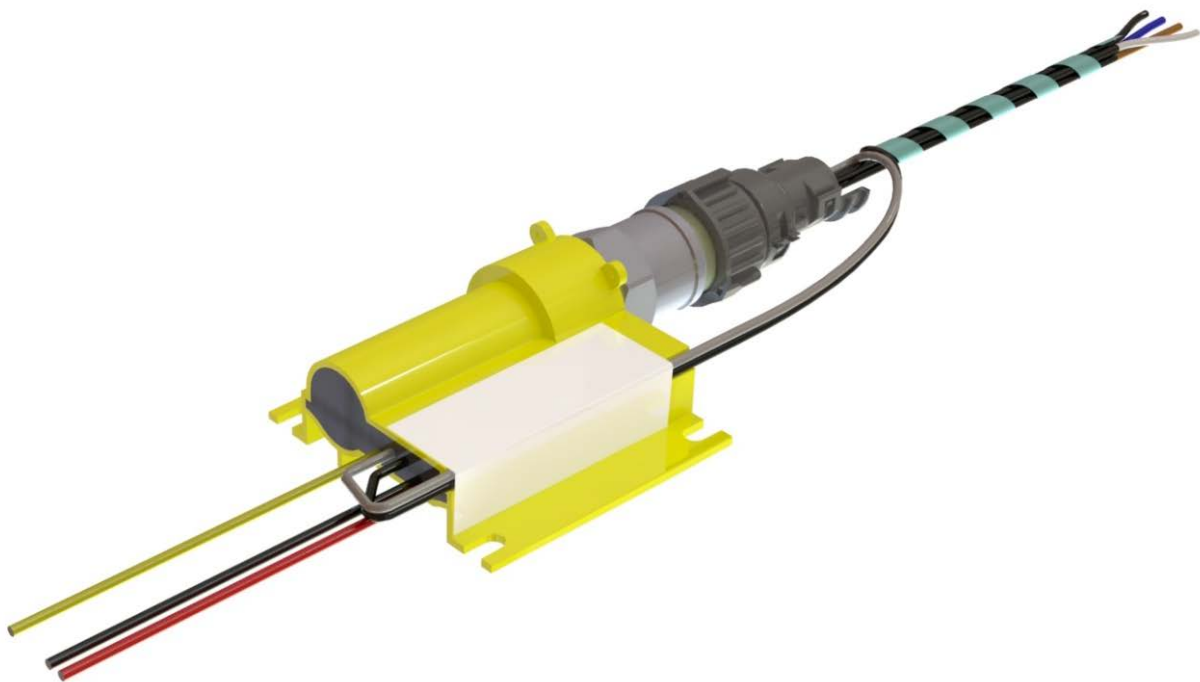
FAQ:



<http://www.dtco-user.com/faq/>

M1 N1 Adapter for the Smart Tachograph

For the DTCO® 4.0 Smart Tachograph, the new M1 N1 adapter must be used with the KITAS 4.0 2185. The adapter is downward compatible and may also be used with DTCO® generations 1.x, 2.x, and 3.x.



Article number: 2910002298300

Continental Automotive GmbH
Heinrich-Hertz-Straße 45
D-78052 Villingen-Schwenningen

VDO – eine Marke des Continental-Konzerns

VDO

1. Product description

The adapter essentially consists of a printed circuit board, cable harnesses, a speed sensor and a housing to accommodate these components and protect them from manipulation. The printed circuit board generates a signal representing the vehicle speed and/or distance travelled. This signal is received by the KITAS speed sensor and is made available to the customer's recording equipment (tachograph) via an electrical signal.

The adaptor must only be used in vehicle categories M1 and N1. It is used when the installation of an existing motion sensor is mechanically impossible.

2. Compatible components

The M1N1 adapter is intended for use with digital and intelligent tachographs that fulfills the EU REGULATION (EU) No 165/2014.

2.1 Built-in motion sensor

Model designation: KITAS 4.0 2185

Approval number:



0002

3. Identification of the adapter

3.1 Label

Manufacturer/ NAP Automotive GmbH, 75181 Pforzheim, Germany	
Installation Date /	12.03.2020
VIN /	12345678901234567
M1N1-Adaptor	
Part No = 664 017 1002	e1 0001
Manufactured = 10/02/2020	
Serial No= 0123456789	E1 10R-05 7690
Sensor	
Manufacturer= Continental Automotive GmbH	e1 0002
Part No= 2185.xxxxxxxx	
Manufactured = KWJJ	E1 10R-05 7762

3.2 Identification of the adapter (example)

1	Manufacturer/ NAP Automotive GmbH, 75181 Pforzheim, Germany	
2	Installation Date /	12.03.2020
3	VIN /	12345678901234567
	M1N1-Adaptor	
4	Part No = 664 017 1002	e1 0001
5	Manufactured = 10/02/2020	
6	Serial No= 0123456789	E1 10R-05 7690
	Sensor	
9	Manufacturer= Continental Automotive GmbH	e1 0002
10	Part No= 2185.xxxxxxxx	
11	Manufactured = KWJJ	E1 10R-05 7762

- (1) Manufacturer: NAP Automotive GmbH Pforzheim
- (2) Installation Date*
- (3) VIN number*

* Documents to be filled indelibly during installation

M1N1 Adapter:

- (4) Part No.
- (5) Manufactured
- (6) Serial No. Adapter
- (7) Type approval
- (8) Type approval EMV

KITAS Sensor:

- (9) Manufacturer: Continental Automotive GmbH VS-Villingen
- (10) Part No,
- (11) Manufacturer Data
- (12) Type approval
- (13) Type approval EMV

4. Technical data

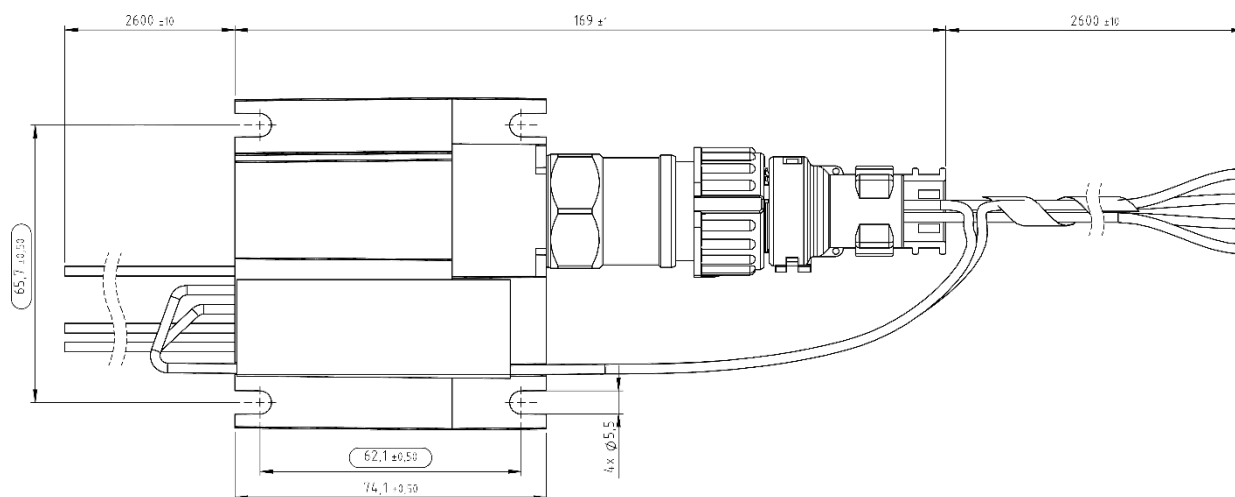
4.1 Electrical data and parameters

Description	Min	Type	Max
General			
Nominal voltage		12V	
Supply voltage, permissible range	8V		16V
Restwelligkeit (DIN 40839, Part 1)			+/- 2V
Power consumption during operation		150mA	300mA
Power consumption in rest mode			8,5mA
Power consumption KITAS sensor			15mA
Outputs			
Digital output 1 (speed/ real-time signal)			
Low (U _L)			800 mV
High(U _H)	UE-1,5V		
Digital output 2 (data/ bidirectional interface)			
Inputs			
Frequency Input (Speed)	1 Hz		2kHz
Processor			
8-bit microcontroller SMD PIC12F1571T-I/SN		4 MHz	
Operating temperature	-20°C ... +70°C		
Storage temperature	-30°C ... +85°C		
Fault voltage protection	ISO 7637-2 (Impuls 1-4)		
Irradiation resistance	ISO 11452-2 (100V/m)		
Reverse polarity protection	DIN 16750-2, 4.7		
Short circuit proof	DIN 16750-2, 4.10		
Protection class	EN 60529-IP56		
EMV	ECE R10		
Vibration	Schwingen rauschförmig nach IEC 60068-2-64		
Housing	Kunststoff		
Weight	~ 320g		

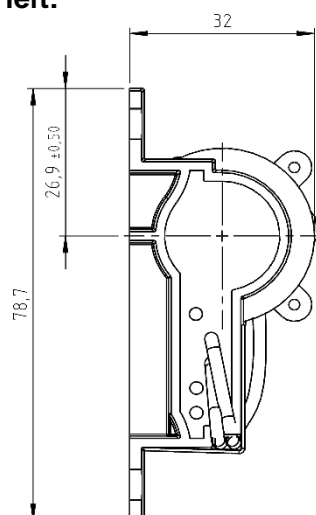
UE= Supply voltage from Tachograph (DTCO) 9V

4.2 Geometric dimensions

Top view:



Side view from the left:



5. Applications and installation instructions

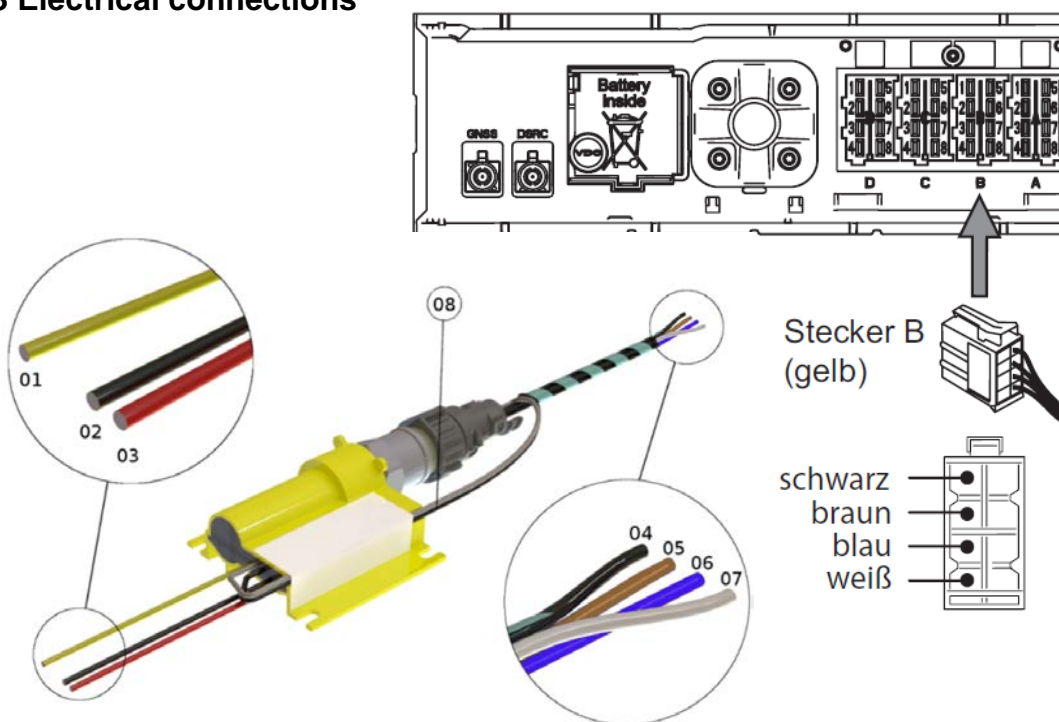
5.1 Mounting

- The flatness of the screw-on point must be 0.5 mm.
- It must be ensured that the screw connection does not loosen itself.
- The cable harness must be mechanically supported (distance <100mm to the mounting point).
- The cable harness must be excited in phase with the instrument.
- Maximum tightening torque of the fixing screws: 3Nm (cap screw to DIN 912 + washer to DIN 125)

5.2 Mounting position

The device must not be installed airtight and must be kept away from heat-sensitive materials and components.

5.3 Electrical connections



No.	Colour	Description
01	yellow	Speed signal ((real time) e.g: Gala signal)
02	black	Mass
03	red	12V power supply Adapter
04	black	9V v sensor supply +
05	brown	v-supply -
06	blue	Real time signal
07	white	Data signal I/O
08	grey	Switched power supply KITAS Sensor (see block diagram)

6. Safety Instructions

6.1 General instructions

- The circuit proposals do not include any system engineering responsibility for the system
- Faulty wiring can cause unexpected signals at the outputs of the electronics.
- Opening the product, changes or repairs to the electronics are prohibited. Changes or repairs to the wiring can lead to dangerous malfunctions. Repairs to the product and the electronics may only be carried out by us or by appropriate contractual partners.
- Ensure that the configuration of the electronics in case of failure or malfunction does not lead to safety-relevant malfunctions of the entire system. Such system behavior can endanger life or cause serious damage to property.
- System developments, installation and commissioning of electronic systems for drive control may only be carried out by trained and experienced specialists who are sufficiently familiar with the handling of the components used and the overall system.
- During commissioning and maintenance of the electronic device, unforeseen dangers may arise from the machine. Therefore, before starting up, make sure that the machine and the connected systems are in a safe condition.
- Ensure that no persons are present in the danger area of the machine.
- No defective or incorrectly working components may be used. If components fail or malfunction, they must be repaired immediately.

6.2 Information on installation location and position

- Do not mount the electronic device near parts that generate a lot of heat (e.g. exhaust).
- The distance to radio equipment must be sufficiently large.
- Before electrofusion and painting work, all connection plugs must be disconnected from the electronic unit.
- The electronic devices must not be electrostatically charged, e.g. during painting work.
- It must be ensured that no water/moisture can get into the device.
- We recommend installing the unit with the plug pointing downwards so that any condensation water can drain off.

6.3 Notes on transport and storage

- After a fall of the device, further use is not permitted, as non-visible damage can impair its reliability.
- The storage of electronic devices must be carried out at a medium relative humidity of 60 % and a temperature between -40 °C and +85 °C.
- After a storage period of more than 5 years, the electronic device must be checked by the manufacturer before use.

6.4 Notes on wiring and cable routing

- The electronics and the power outputs of a device must be supplied from the same power supply system.
- The product may only be wired in a de-energized state.
- Cables to the electronics must not be laid in the vicinity of other power cables in the device or vehicle.
- The wiring harness must be mechanically supported in the area of the mounting point (distance < 150 mm) of the electronic device. The cable harness is to be supported in such a way that excitation in phase with the device takes place (e.g. at the screw-on point of the device).
- Cables must not be kinked or twisted, must not chafe on edges and must not be laid without protection through sharp-edged bushings.
- Cables must be laid at a sufficient distance from hot and moving vehicle parts.
- The sensor supplies can be "pulled up" by external circuitry, e.g. by applying a higher voltage, since they only work as a voltage source and not as a voltage sink! Pulling up a voltage source can lead to unpredictable malfunctions and, in the case of continuous operation, to damage to the electronic device.

6.5 Intended use

- The device must generally be operated within the operating ranges specified and approved in this data sheet, especially with regard to voltage, current, temperature, vibration, shock and other environmental influences described.
- Use outside the specified and approved boundary conditions can lead to danger to life and/or damage to the components, or result in consequential damage to the mobile machine.

6.6 Improper use

- Use of the electronic device other than that described in the chapter "Intended use" is considered improper use.
- Use in potentially explosive atmospheres is not permitted.
- In the event of damage resulting from improper use and/or unauthorized interventions not provided for in this data sheet, all warranty and liability claims against the manufacturer are voided.

6.7 Use in security relevant functions

- The device must not be used for safety-relevant functions
- It is the customer's responsibility to perform a risk analysis and determine the possible safety-related functions.
- It is the responsibility of the customer to take appropriate measures to achieve safety in safety-relevant applications (sensor redundancy, plausibility check, emergency switch, etc.).
- For example, by suitable assignment of input variables (e.g. connection of the signal to be acquired to two independent analog inputs), errors can be detected and specially programmed reactions can be activated.
- Required product data, which are necessary for the safety evaluation of the machine, can be provided on request or are listed in this data sheet.

7. Testing with the WorkshopTab

When testing with the WorkshopTab, the hook must be set for the M1N1 adapter

Wizard Calibration ...

- Vehicle / Tacho data**
- Tachograph data
- GNSS & DSRC data
- Customer data
- Speed checking / Device checking / Device replacement
- Vehicle test
- M1N1 adapter
- Manipulation

Vehicle / Tacho data

In this dialog you can enter / edit the data related to the vehicle and the tachograph. All mandatory fields are marked with a orange background. After entering the data you can continue by pressing Next. When pressing Cancel, all changes will be lost.

Calibration

☐ Vehicle with IMS
☒ M1N1 Adapter
☒ 57b checking
☐ 57d checking

Vehicle data

VIN

VRN

☐ VRN available

Manufacturer / Type

X

X

Job number

Next

DTCO1381

Then the data of the M1N1 adapter is entered:

Wizard Calibration ...

- Vehicle / Tacho data
- Customer data
- Speed checking / Device checking / Device replacement
- Vehicle test
- M1N1 adapter**
- Manipulation

M1N1 adapter

In this dialog you can enter / edit the data related to the M1N1 adapter. All mandatory fields are marked with a orange background. After entering the data you can continue by pressing Next. When pressing Cancel, all changes will be lost.

Installation location

Behind the radio

Imp wire colour

white

Prev

Next

DTCO1381

Then the second mounting plate for the M1N1 adapter is also generated:

Prüfnachweis §57b (Aufbewahrungspflicht 3 Jahre)			
<u>Halterdaten</u>			
Fahrzeughalter	GmbH & Co. KG		
Straße			
PLZ / Ort			
Kundennummer			
<u>Fahrzeugdaten</u>			
Fahrzeughersteller und -typ	Renault Traffic		
Fahrzeug-Ident-Nr.	VF1JL000663		
Amliches Kennzeichen			
Auftragsnummer			
<u>Tachographendaten</u>			
	1381.7550333003 / Continental Automotive GmbH	Serien-Nr.	10261926
Gerätetausch	Neu <input checked="" type="checkbox"/> RAS <input type="checkbox"/>	Reparatur	<input type="checkbox"/>
Seriennummer Sensor / Herstelldatum	20318308 8 / 19		
Hersteller Sensor	Continental Automotive GmbH		
Ext. GNSS	Nicht verfügbar	Serien-Nr.	
DSRC Serien Nr.	10261926		
Plomben S.-Nr.	BP00541006		
<u>Fahrzeugprüfung</u>			
Reifengröße	215/65 R 16 C		
Profiltiefe	10,0 mm		
Reifendruck	4,0 bar		
Messverfahren	Messstrecke		
Wirksamer Reifenumfang	I	2097 mm	
Wegimpulszahl	W	4956 Imp/km	
Wegstreckenzähler vor / nach Prüfung	97 km / km		
Zulässige Geschwindigkeit DTCC	220 km/h		
GNSS Prüfung	In ordnung		
DSRC Prüfung	In ordnung		
Nr. Plombierfolie	ZSN3Q3S		
<u>Tachographenprüfung</u>			
Apparatekonstante	k	4956 Imp/km	
	k(alt)	0 Imp/km	
Geschwindigkeitsprüfung	20,0 km/h 80,0 km/h 180,0 km/h		
Wegstreckenzählerprüfung	1000 m		
Zeitabweichung der Uhr	-0,2 Sek/Tag		
<u>Manipulationsprüfung / Wartung</u>			
- Es wurden keine Manipulationsgeräte erkannt - Kontrollgerät funktioniert ordnungsgemäß - Pufferbatterie beim VDO DTCC nicht gewechselt - Kartenschächte des VDO DTCC nicht gereinigt			
<u>Bemerkungen / Besonderheiten</u>			
w/i-Wert: Wert bestätigt			
Hiermit bestätigen wir, dass alle Prüfungen nach den im "Technischen Produktanhandbuch EIG-Kontrollgeräte/Fahrtschreiber" beschriebenen Arbeitsrichtlinien durchgeführt wurden.			
KC			
GmbH	31.01.2020		- 00
Heinrich-Hertz-Straße D-78052 Villingen-Schwenningen	Prüfdatum	Unterschrift	

Zusätzliches Einbauschild für M1/N1 Fahrzeuge

K¹ GmbH
Heinrich-Hertz-Straße
D-78052 Villingen-Schwenningen
Prüfdatum 31.01.2020
Fz.-Nr. VF1JL0006634
Serien-Nr. 10261926
Reifengröße 215/55 R 16 C
w= 4956 Imp/km
k= 4956 Imp/km
l= 2097 mm
Installationsort
Unter dem Radio
Kabelfarbe
Weiss
Serien-Nr. Sensor 20318308

4956

K¹ GmbH
Heinrich-Hertz-Straße
D-78052 Villingen-Schwenningen
Prüfdatum 31.01.2020
Fz.-Nr. VF1JL0006634
Serien-Nr. 10261926
Reifengröße 215/55 R 16 C
w= 4956 Imp/km
k= 4956 Imp/km
l= 2097 mm
Installationsort
Unter dem Radio
Kabelfarbe
Weiss
Serien-Nr. Sensor 20318308

4956

Hiermit bestätigen wir, dass alle Prüfungen nach den im "Technischen Produktanhandbuch EG-Kontrollgeräte/Fahrtschreiber" beschriebenen Arbeitsrichtlinien durchgeführt wurden.

K¹ GmbH

Heinrich-Hertz-Straße
D-78052 Villingen-Schwenningen

31.01.2020
Prüfdatum

Unterschrift

00

8. Sealing the KITAS sensor with the housing



The workshops are responsible for the sealing. Each workshop can be clearly identified by the seal number.

Notes on the use of the adapter:

- The traceability of the KITAS sensor must be guaranteed (record the serial number of the KITAS sensor in e.g. VDO SealBase).
- As part of the tachograph test, the serial number of the embedded motion sensor (KITAS) must be checked and documented on the installation label (the serial number of the adapter does not need to be recorded).
- If it is necessary to replace the vehicle unit in case of a defect, the complete adapter must also be replaced.
- In connection with the Intelligent Tachograph, the KITAS sensor must be sealed with the adapter housing using a seal according to the specifications of Appendix 1C.
- This seal must be checked and replaced as part of the regular inspection, regardless of the condition of the seal. The sealing regulations according to Annex 1C apply.