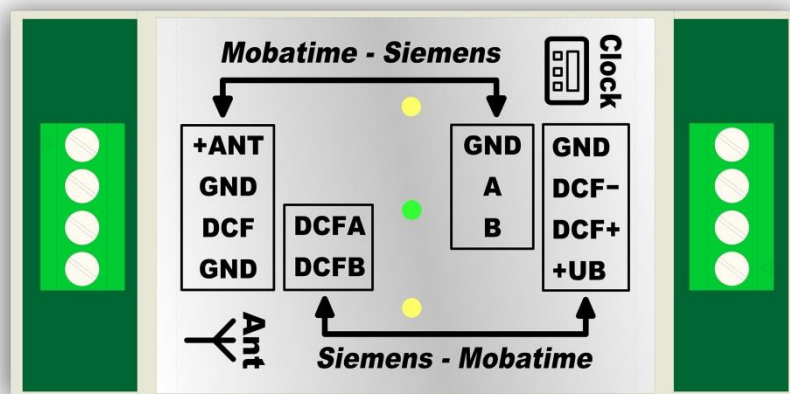


# Installation and Operation Manual

## Siemens GNSS Interface



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## References to the Instruction Manual

1. The information in this Instruction Manual can be changed at any time without notice. The current version is available for download at [www.zentralhauptuhren.de](http://www.zentralhauptuhren.de).
2. This Instruction Manual has been composed with the utmost care, in order to explain all details in respect of the operation of the product. Please do not hesitate to contact us if you have any questions. Thank you for reporting any possible mistakes.
3. We do not answer for direct or indirect damages which could occur when using this manual.
4. Read the instructions carefully. Only start setting-up the product if you have understood the information for installation and operation.
5. The installation must only be carried out by skilled staff.
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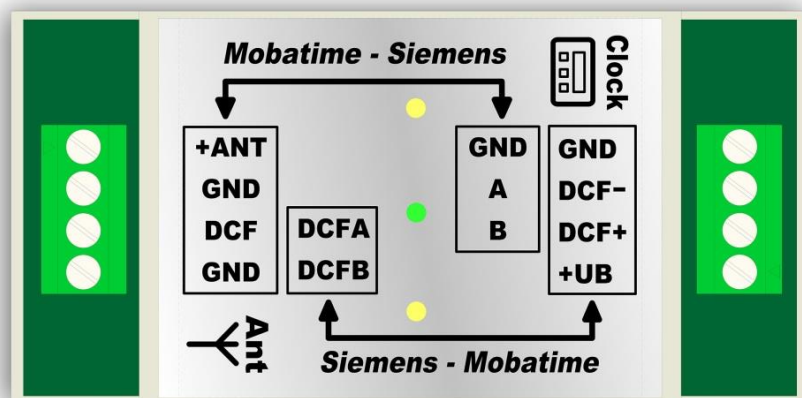
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## 1. Description

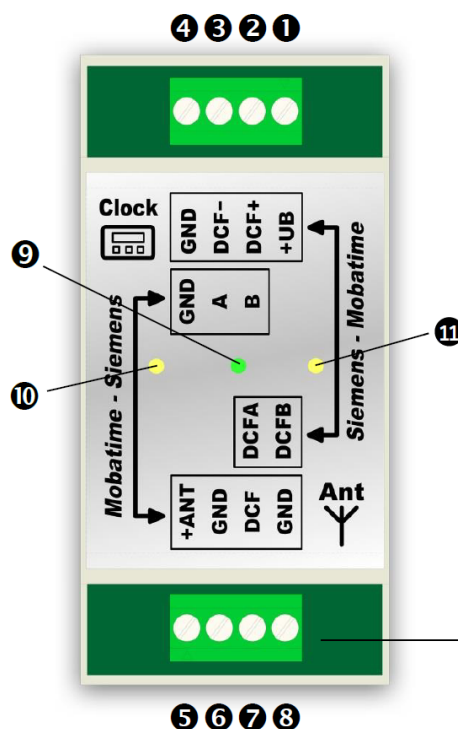
SIEMENS GNSS Interface for antenna signal matching between products of different manufacturers.

- Dual interface for connection of a master clock with a GPS antenna of different manufacturers.
- Variant A: Siemens Masterclock TC100 or TC400 synchronized with antenna MOBATIME GNSS 4500.
- Variant B: MOBATIME Masterclock DTS 41xx synchronized with antenna Siemens GPS 2000.
- Conversion of input voltage to corresponding antenna voltage level.
- Conversion of the antenna signal currents and their logic levels.
- 3 status LEDs show the current function (depending on the intended use, 2 of these LEDs light up).



## 2. Connections and Funktion

①	Masterclock	+ UB	DTS 41xx: Connection to „ <b>VB</b> “ terminal of the DTS device nom. 24VDC / < 100mA
②		DCF+ B	DTS 41xx: Connection to „ <b>DCF IN+</b> “ terminal of the DTS device TC100/400: Connection to „ <b>RADIO CLOCK B</b> “ terminal
③		DCF- A	DTS 41xx: Connection to „ <b>DCF IN-</b> “ terminal of the DTS device TC100/400: Connection to „ <b>RADIO CLOCK A</b> “ terminal
④		GND	DTS 41xx: Connection to „ <b>GND</b> “ terminal of the DTS device TC100/400: Connection to „ <b>RADIO CLOCK GND</b> “ terminal
⑤	Antenne	+ANT	GNSS 4500: +Power (Color: yellow or green, see antenna connection)
⑥		GND	GNSS 4500: -Power (Color: yellow or green, see antenna connection)
⑦		DCF DCFA	GNSS 4500: +DCF (Color: white) GPS 2000: +Power/DCF (Color: white or brown)
⑧		GND DCFB	GNSS 4500: -DCF (Color: brown) GPS 2000: -Power/DCF (Color: white or brown)
⑨	Anzeigen	Power	green: Power supply O.K.
⑩		Signal	yellow: DCF Signal (switch <b>off</b> once every second for 100-200ms) Variant: Siemens Masterclock – MOBATIME antenna
⑪		Signal	yellow: DCF Signal (switch <b>on</b> once every second for 100-200ms) Variant: MOBATIME Masterclock – Siemens antenna



### Important

The terminals are double used, which allows only one conversion per interface.

This means, either:

„**Siemens to MOBATIME**“

or

„**MOBATIME to Siemens**“

### Antenna connections

#### GPS 2000

Polarity independent connection:

brown: DCFA or DCFB

white: DCFA or DCFB

#### GNSS 4500

yellow +ANT / green GND: = UTC

green +ANT / yellow GND: = MEZ

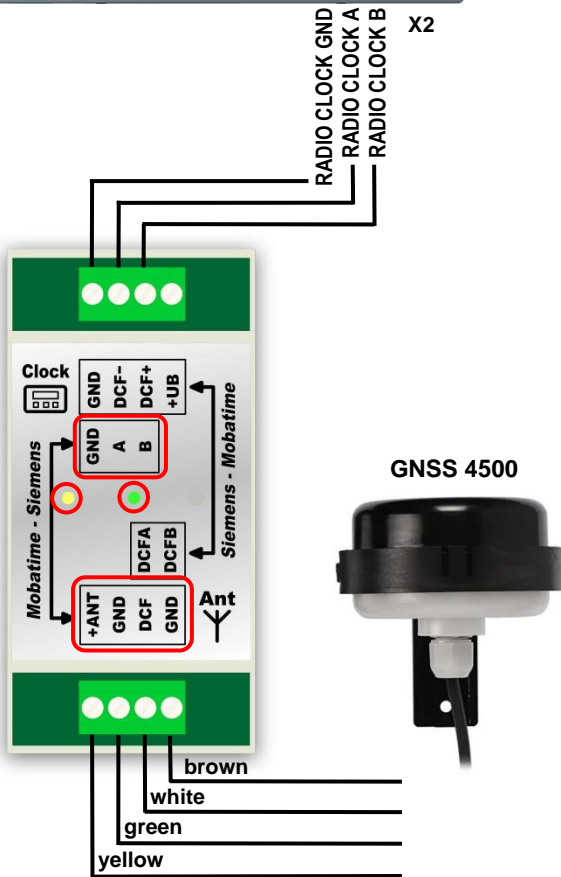
white: +DCF

brown: -DCF

### 3. Application-Examples

#### Variant A:

Siemens Masterclock TC100 resp. TC400 synchronized with MOBATIME antenna GNSS 4500.

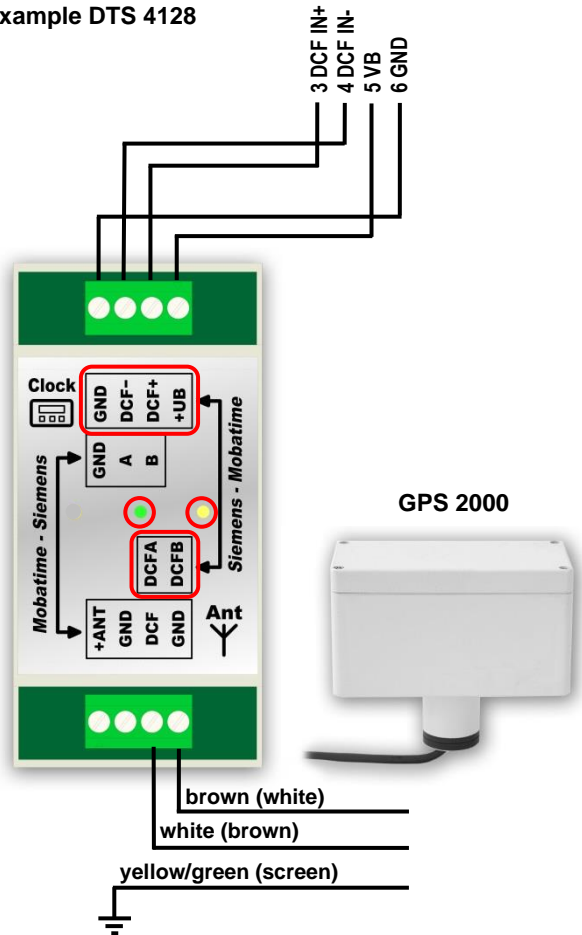


#### Variant B:

MOBATIME Masterclock DTS 41xx synchronized with Siemens antenna GPS 2000.



#### Example DTS 4128



#### Startup behavior:

yellow LED normally on and goes off briefly every 5 sec.

#### Operation:

yellow LED normally on and goes off every second for 100-200ms.

#### Remark:

In the wiring shown above, the GNSS 4500 antenna outputs a DCF telegram with UTC time.

#### Startup behavior:

yellow LED flashes briefly every 2 sec.

#### Operation:

yellow LED flashes once every second for 100-200ms.

#### Remark:

The "white and brown" cables of the GPS 2000 antenna are polarity independent and can therefore also be connected in reverse.

**General note:**

In both example circuits the representation of corresponding lightning protection is missing.  
 Recommendation for GNSS 4500: Lightning protection box SP 4500.

**4. Technical Data**

	Siemens GNSS Interface
Input voltage (DC from TC100 / 400)	40-60 V
Input voltage (DC from DTS 41xx)	15-30 V
Output voltage (ANT GPS 2000)	nom. 40 V
Output voltage (ANT GNSS 4500)	nom. 30 V
Current (TC 400 – GNSS 4500)	ca. 40 mA
Current (DTS 41xx – GPS 2000)	ca. 80 mA
Internal fuse	100 mA (self-regenerating)
Signal current (DCF) TC 400	20 mA ±10%
Signal current (DCF) DTS 41xx	14 mA ±10%
Signal delay IN - OUT	<100 ns (PPS-edge)
Temperature range	-20°C to +70°C
Dimensions L x B x H	94 mm x 48 mm x 60 mm
Mounting	DIN rail 35 mm
Weight	150 g



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