

# SERVICE INSTRUCTION

## INSTALLATION INSTRUCTIONS OF REV-COUNTER PART NO. 966403 AND 966408 FOR ROTAX® ENGINE TYPE 912 AND 914 (SERIES) SI-13-1996 R2

### Repeating symbols:

Please, pay attention to the following symbols throughout this document emphasizing particular information.

▲ **WARNING:** Identifies an instruction, which if not followed, may cause serious injury or even death.

■ **CAUTION:** Denotes an instruction which if not followed, may severely damage the engine or could lead to suspension of warranty.

◆ **NOTE:** Information useful for better handling.

| || A revision bar outside of page margin indicates a change to text or graphic.

### 1) Planning information

#### 1.1) Engines affected

All versions of the engine type:

- 912 (Series) all
- 914 (Series) all

#### 1.2) Concurrent ASB/SB/SI and SL

none

#### 1.3) Reason

This information is intended to assist the aircraft designer, manufacturer and builder to achieve correct operating conditions and assembly for the engine and consequently optimum performance and reliability.

Due to our commitment to product improvement a new rev.counter with modified electronics has been introduced.

◆ **NOTE:** This modification was introduced in serial production starting from production code 01 04

#### 1.4) Subject

Installation instructions of rev-counter part no. 966403 and 966408 for ROTAX® engine type 912 and 914 (Series)

#### 1.5) Compliance

NONE - For Information Only

▲ **WARNING:** Non-compliance with these instructions could result in engine damages, personal injuries or death.

#### 1.6) Approval

The technical content is approved under the authority of DOA Nr. EASA.21J.048.

#### 1.7) Manpower

Estimated man-hours:

Engine installed in the aircraft - - -manpower time will depend on installation and thuse, no estimate is available from the engine manufacturer.

#### 1.8) Mass data

Change of weight - - - none

Moment of inertia - - - unaffected

#### 1.9) Electrical load data

No change

#### 1.10) Software accomplishment summary

No change

### 1.11) References

In addition to this technical information refer to current issue of

- Operator's Manual (OM)
- Illustrated Parts Catalog (IPC)
- Installation Manual (IM)
- Installation Instructions

### 1.13) Interchangeability of parts

Old and new rev-counters are interchangeable

## 2) Material Information

### 2.1) Material - cost and availability

Price and availability will be supplied on request by ROTAX<sup>®</sup> Authorized Distributors or their Service Centers.

### 2.3) Material requirement per engine

parts requirement:

<u>Fig.no.</u>	<u>New part no.</u>	<u>Qty/engine</u>	<u>Description</u>	<u>Old part no.</u>	<u>Application</u>
(2)	966408	1	rev.-counter	966403	electric system

## 3) Accomplishment

### Instructions

All the measures must be taken and confirmed by the following persons or facilities:

- ROTAX<sup>®</sup> -Airworthiness representative
- ROTAX<sup>®</sup> -Distributors or their Service Centers
- Persons approved by the respective Aviation Authority
- Persons with type-specific training (applicable only for non-certified engines)

▲ **WARNING:** Proceed with this work only in a non-smoking area and not close to sparks or open flames. Switch off ignition and secure engine against unintentional operation. Secure aircraft against unauthorized operation. Disconnect negative terminal of aircraft battery.

▲ **WARNING:** Perform work on a cold engine only.

▲ **WARNING:** Should removal of a locking device (namely lock tabs, self-locking fasteners) be required when undergoing disassembly/assembly, always replace with a new one.

◆ **NOTE:** All work has to be performed in accordance with the relevant Maintenance Manual.

### 3.1) General information:

The **minimum requirements for engine instrumentation** comprises besides pressure and temperature indication, an **engine rev. counter**. Besides the well-known **ROTAX FLYdat** for acquisition and storage of engine operation data with the continuous digital indication of the engine speed, an **electronic rev. counter**, is readily available at **ROTAX part no. 966403/966408**. Employment of this rev-counter is only possible in conjunction with the ROTAX rev pick-up part no. 264080, 264085 or 264087.

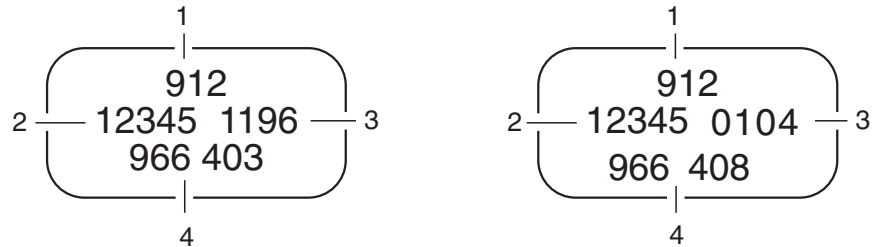
■ **CAUTION:** The electronic rev. counter, part no. 966403/966408, has not undergone any safety and durability examination to the standards of Civil Aviation but does incorporate the latest technical development and has been thoroughly tested.

Despite of the rev. counter being a precision instrument, false indication or misinterpretation of data could occur. By utilizing this rev. counter the user acknowledges the possible danger and responsibility for all risks.

### 3.2) State of supply:

Instrument packed in a plastic bag, 4 attachment screws M4 and three loose plugs in a cardboard box. Verify suitability of this instrument (1), the production code (2), the date of production (3) and the ROTAX<sup>®</sup> part number (4) on the white label on the back of the instrument and on the packing.

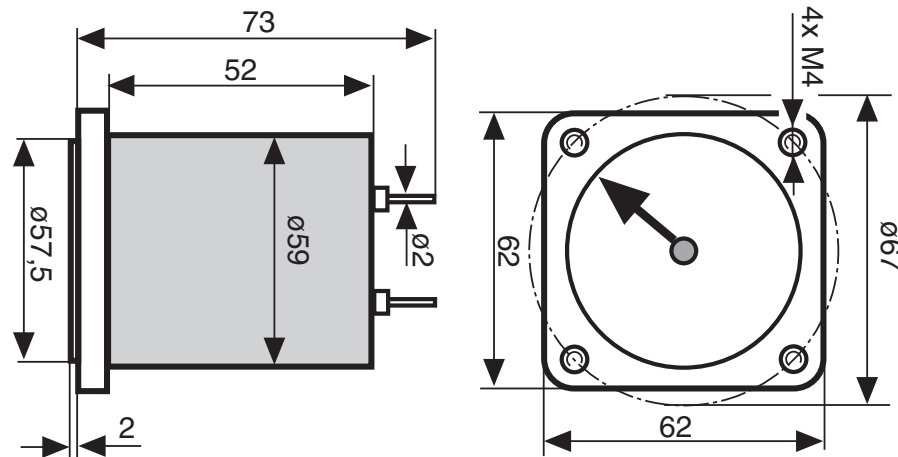
fig. 1  
00106



### 3.3) Technical data and dimensions:

- |                          |   |
|--------------------------|---|
| Case:                    | plastic   |
| Weight:                  | 197 g   |
| Suitable for:            | employment in conjunction with ROTAX <sup>®</sup> rev pick-up part no. 264080, 264085 or 264087 |
| Power supply:            | need for external power supply (8,5÷14,5 V DC)  |
| Scale:                   | 0 - 7000 rpm  |
| Subdivision of scale:    | 200 rpm each  |
| Max. deviation:          | ± 100 rpm   |
| Installation dimensions: | see sketch  |
| Calibration:             | Calibrated by manufacturer prior to shipment.   |
- CAUTION: Employment of these rev-counters are only possible in conjunction with the ROTAX<sup>®</sup> rev pick-up part no. 264080, 264085 or 264087.

fig. 2  
00107



### 3.4) Installation instructions:

- Install instrument in pilot's field of view, free of vibrations and glare.
- Protect instrument against dampness and any kind of gasolines, oils and acids.
- pay attention to installation dimensions
- ends of cables to be furnished with suitable plugs or cable lugs and insulation.
- At routing of cables prevent damage of cables possible by heat, vibrations, shearing or crushing.
- Wiring has to be carried out by plastic-sheathed cable of good quality (H05VV-F 1,0 mm<sup>2</sup> - DIN VDE 0281) or equivalent.

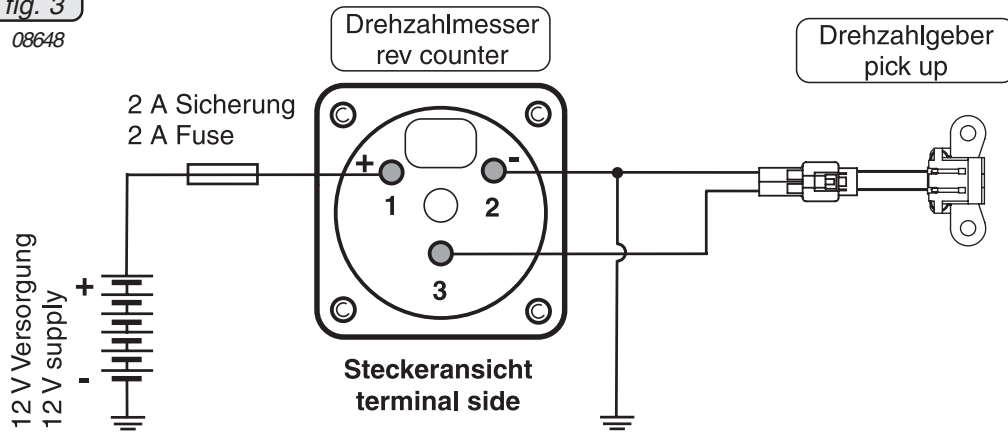
### 3.5) Wiring diagrams:

The following drawings / wiring diagrams should provide additional information:

#### 3.5.1) for ROTAX® 912 serial version:

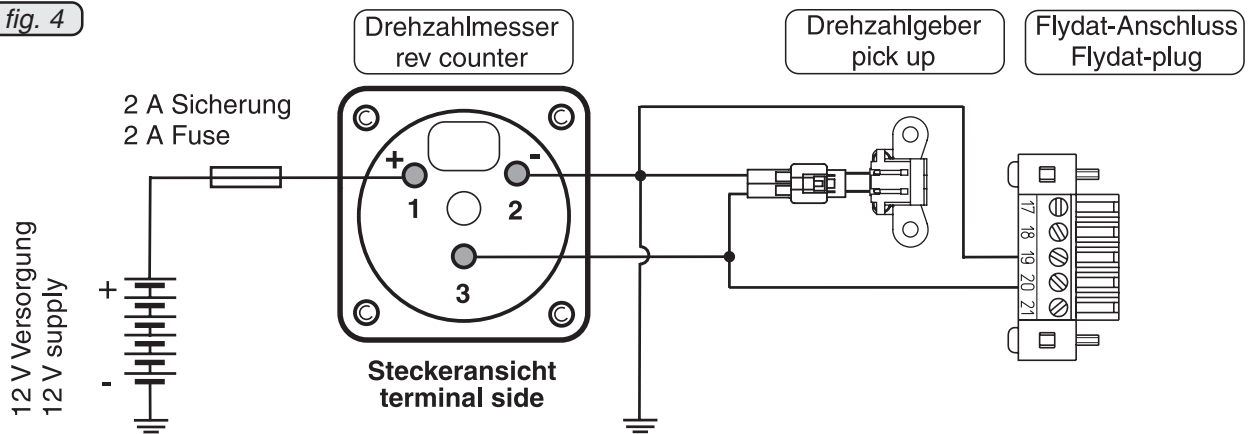
fig. 3

08648



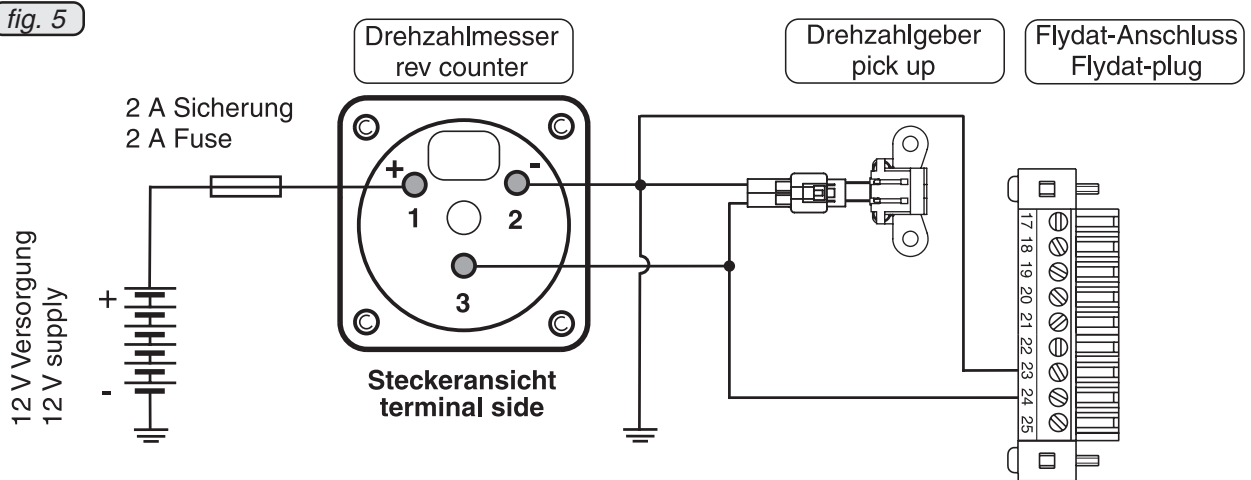
#### 3.5.2) for ROTAX® 912 with flydat: part no. 886855/886856

fig. 4

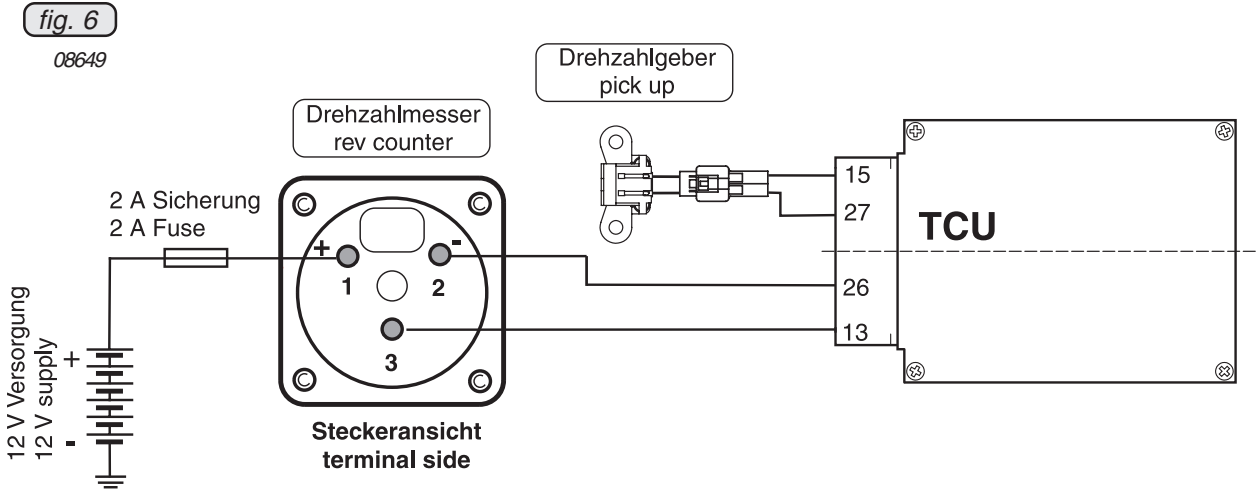


#### 3.5.3) for ROTAX® 912 with fly dat: part no. 886857/886858

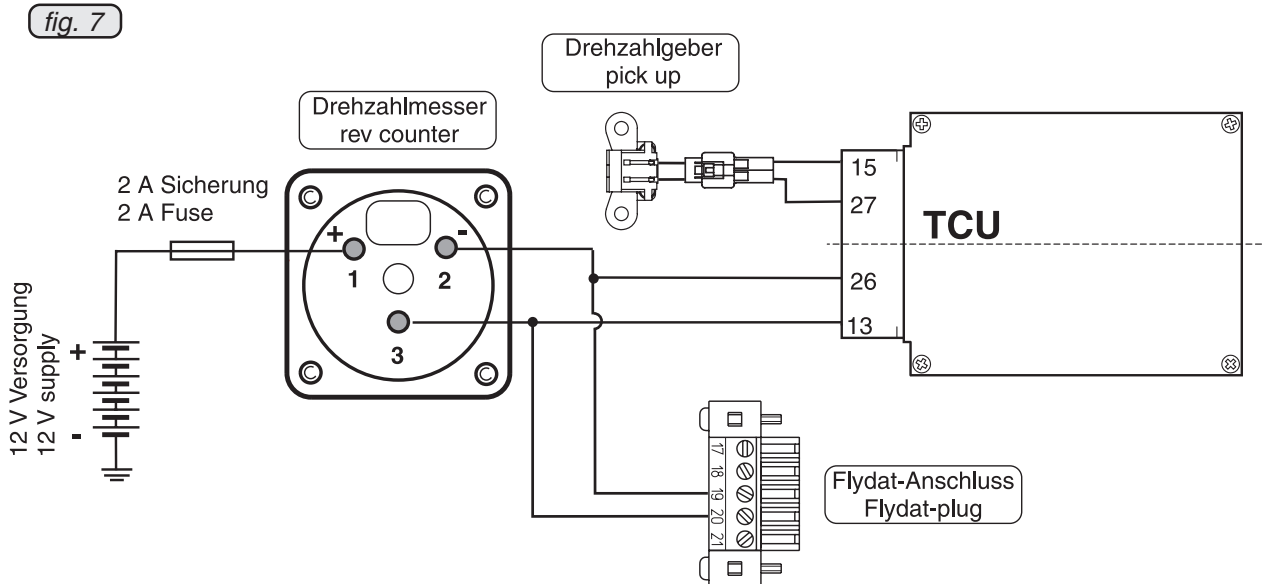
fig. 5



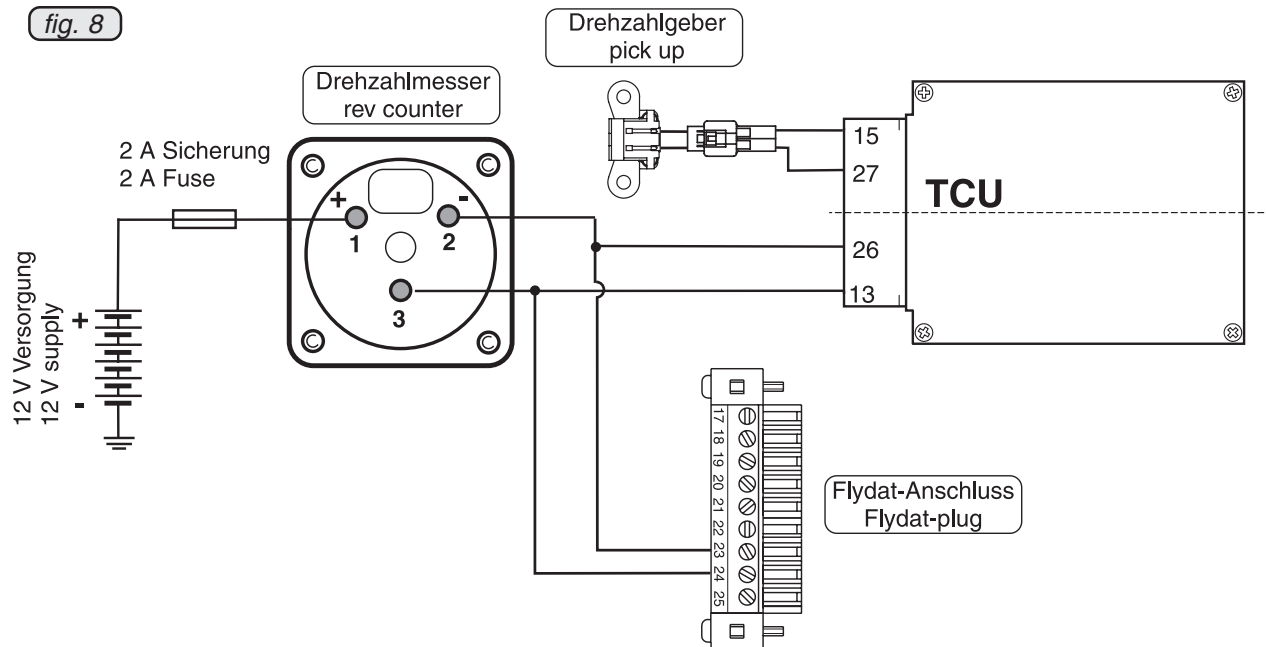
3.5.4) for ROTAX® 914 serial version:



3.5.5) for ROTAX® 914 with flydat: part no. 886855/886856



3.5.6) for ROTAX® 914 with fly dat: part no. 886857/886858



### 3.6) Function:

- The rev pick-up signals the generator frequency to rev-counter.
- CAUTION: Max. allowable speed of the engine as per Operator's Manual. Please distinguish clearly between the 'Red Zone' on the instrument and the actual dangerous speed range of the respective engine.
- ▲ WARNING: Too high engine speed will increase risk of engine damage.
- Restore aircraft to original operating configuration.
- Connect negative terminal of aircraft battery.

### 3.7) Directive for checking:

The instrument has to be checked and possibly readjusted in the following circumstances.

- prior to the initial operation
- after every 50 hours of operation
- at proven improper indication, like
  - abruptly increased indication at rise of engine speed
  - Sticking pointer, won't return to home position
  - Pointer stuck in home position (zero)
- checking at **5000 rpm** with a calibrated instrument
- duration of check: at least **5 min.**
- tolerance: **± 100 rpm** for the entire duration of check

### 3.8) Methods of checking:

- Check by a calibrated electronic tachometer connected parallel.
- Check by a calibrated stroboscope direct on propeller under consideration of reduction gear ratio and number of prop blades.
- Check by clip-on inductive tachometer on ignition cable.
- Direct by check on propeller shaft by a mechanical hand-tachometer or with optical scanning.

■ CAUTION: Checking the instrument by resistance measuring (static readings) is meaningless!

At proven incorrect indication, adjust as practicable via adjustment hole on back of instrument, covered by a yellow or blue label (1).

If this should prove unsuccessful, instrument can't be used any more. Repair of the instrument is not possible.

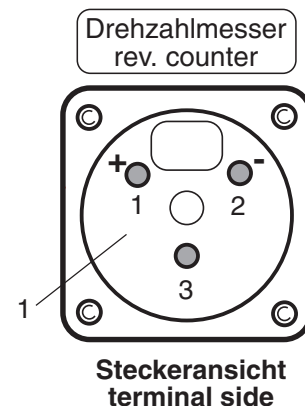
◆ NOTE: Possible reason of fault could be a bad contact at clamping connections or interruption in wiring.

### 3.9) Test run

Conduct test run including ignition check and leakage test.

fig. 9

00446



◆ NOTE: The illustrations in this document show the typical construction. They may not represent full detail or the exact shape of the parts which have the same or similar function. Exploded views are **not technical** drawings and are for reference only. For specific detail, refer to the current documents of the respective engine type.

Approval of translation to best knowledge and judgment - in any case the original text in the German language and the metric units (SI-system) are authoritative.