

Glider Computer ZANDER / SDI ZS1

Installation Notes:

See attached cable diagram.

Remove knob before installing ZS1:

Remove cap with a sharp tool. Loosen screw and press on screw slightly to release the knob. After installation reassemble the knob with an air gap of about 0.5mm. When putting on the cap again, check for the nose within the knob and the (larger) gap at the cap.

Connectors at rear side of ZS1:

Row A: four RJ-45 sockets (like PC network cables) with all contacts in parallel, so that the position of a cable is unimportant. This row contains connections for power supply, for data connection to GP941, analog unit ZS1R and second seat unit, for outside air temperature sensor, for flap switch and for speaker using the so marked cables.

Outside air temperature sensor: install into fresh air channel

With the cables there is a 3 meter extension cable and a tripple distributor unit. If the extension cable is put into one socket at row A, the speaker and/or GP941 can be installed behind the seat.

If the second seat unit is present, the extension cable is put into a socket of row A at the second seat unit too. Then the other free sockets can be used for second analog unit, for speaker and/or GP941.

Row B: two RJ-45 sockets with all contacts in parallel, so that the position of a cable is unimportant. This row contains connections for compass (KXE,KXA,KYE,KYA: main unit ZS1 only) and connections to PC (which is NMEA output as well). A beeper for second seat unit is also connected to row B.

The PC/NMEA cable can be used with housing or the 9 pin socket is installed into the instrument panel after removing the connector housing. The PC connection must be available for later program updates or updates of airspace data. If a second seat unit is present, this must have available too a PC connector for program and data updates, as main unit and second seat unit always must have the same set of programs and data.

The connection to the compass has an additional 4 pin connector. If the compass is fixed to the canopy, the cables should be fixed in a way that this 4 pin connection serves as a weak link if the canopy must be jettisoned in a case of accident.

15 pin socket: used for remote control stick. The transmit button on the stick is connected to pins 7 and 8 of this connector. An additional connection must be wired from these two pins to the radio to be able to turn on the radio transmitter. If two remote control sticks are used, both transmit switches must be wired in parallel externally.

The 15 pin socket also contains the PC connection, so that the PC cable for SR940 (15pin to 9pin) can be used as well for ZS1 (PC-GND=2, PC-TX=3, PC-RX=4).

For own remote control: the pin function shown in the drawing ZS1_RC is activated, if the pin is connected to GND.

If wiring for SR940 should be reused or if a 9 pin data cable is already going from front to rear, spezial adapter cables to ZS1 are available.

Pressure ports:

Depending on the selected type of total energy compensation, different hose connections and different settings at the ZS1 are required:

Compensation by TE probe (recommended):

Port "TE / STATIC" is connected to the TE probe, "PITOT" is connected to total pressure. The quality of the variometer is only determined by the quality of the probe and the position of the probe.

Electronic compensation:

Port "TE / STATIC" is connected to a good static pressure, "PITOT" is connected to a good total pressure. The quality of the variometer depends on the quality of both static and total pressures.

The ZS1 has only two pressure ports. If the glider provides a hose with static pressure, this must be sealed if not used.

Before putting on the hoses, make a mark at 15mm from the end of the hose. Then push the hose on to the port up to the mark.

Installation of compass:

The compass delivers reliable wind information only, if the compass system is calibrated. The compass is used to measure the wind drift to the side. A compass heading error of 1° will deliver a wind drift error of 3km/h at TAS 150km/h. So with 5° error the wind drift will be wrong by 15km/h which means that the wind measurement with the compass is useless.

Where to put the compass:

At minimum 20cm away from the speaker box or other magnetic parts! Move the compass from some distance to the intended place of installation and check the deviation of the compass needle. In most cases a good place is on top of the cover of the instrument panel.

Remove compensation unit of compass:

The compensation unit is placed within the chamber below the compass window and can be easily pulled out. If left in, the compass error at some directions may change with changing pitch angles of the glider. If the errors shown in the compass window for the main directions N, S, E, W are more than about 10°, the compensation unit must be left in.

Compensation of compass:

Adjust N/S screw until errors for N and S are of same magnitude, but with opposite sign. Repeat same procedure for E/W screw.

Calibrate compass sensor:

Must be done before first use of compass or after change of compass or compass sensor.

Is already done by manufacturer if number of sensor is shown correctly on ZS1 display.

ZS1 settings "Compass": set "calibrated? =NO", enter sensor number (written on the housing of the 4pin plug) and calibrate according to instructions shown on ZS1 at 45°, 135°, 225° and 315°. These directions must be shown in the compass window (the electronic display is ignored).

Set up deviation table:

Use a reference compass at the tail of the glider. Canopy closed and locked, so that all magnetic parts are in flying position. Turn on all electrical instruments. Write down for every 15° the heading shown on the electronic display and enter these numbers into ZS1 deviation table according to the instructions given by ZS1 help function.

Parts for Glider Computer ZS1:

- computer unit with mounting nuts
 - power supply cable with temperature sensor and flap switch input
 - Reed switch with magnet (flap switch)
 - cable ZS1 <-> PC connector (for installation into instrument panel: remove housing)
 - extension cable 9 pin from PC connector to PC serial port (for ZS1, ZS1G and GP941)
 - speaker box with mounting screws
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- ZS1R analog unit with mounting screws
 - cable ZS1 <-> ZS1R
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- remote control stick grip
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- extension cable RJ-45 (3.0m) to mount speaker box or flight recorder GP941 behind front seat
to connect second seat operating unit
(for all functions only one cable necessary)
 - 3-socket RJ-45 distributor for signal branching behind front seat
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- installation notes with cable diagram
 - CD-ROM with manuals and PC program for ZS1, ZS1G, GP941

Parts for flight recorder GP941:

- flight recorder GP941 with mounting bracket
- cable ZS1 <> GP941
- GPS antenna with cable 60cm
- antenna extension cable 3.0m (if GP941 is mounted behind front seat)
- calibration sheet

only if ZS1 is not included:

- extension cable 9 pin from PC connector to PC serial port (for ZS1, ZS1G and GP941)
- CD-ROM with manuals and PC program for ZS1, ZS1G, GP941

Parts for compass option:

- magnetic compass with sensor
- deviation table for instrument panel
 - with compensating unit for compass, with mounting screws for compass
- cable ZS1 <> compass

Parts for second seat unit:

- ZS1G second seat operating unit (with sockets to connect speaker box and/or flight recorder GP941)
- beeper for second seat unit
- cable ZS1 <> PC connector (for installation into instrument panel: remove housing)

- ZS1R analog unit with mounting screws
- cable ZS1G <> ZS1R

- remote control stick grip

only if ZS1 is not included:

- extension cable 9 pin from PC connector to PC serial port (for ZS1, ZS1G and GP941)
- CD-ROM with manuals and PC program for ZS1, ZS1G, GP941

if SR940 data cable (9 pin Sub-D) is already installed between front seat and rear seat:

- special cable RS: ZS1 <> 9 pin Sub-D
- special cable RP: 9 pin Sub-D <> ZS1G



