

IC-15 INTERCOM

Installation/Operation Manual



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SECTION 1 - OPERATION INFORMATION

OPERATION INFORMATION

Destination /Characteristic

Intercom IC-15 is planned for installation in light-, and ultralight aircraft, with 2 or 4 -person on-board: pilot and co-pilot, or pilot and passenger or pilot and 3 passengers

Unit design facilitates installation in vertical or horizontal position, in separate panel or in aircraft instrument panel.

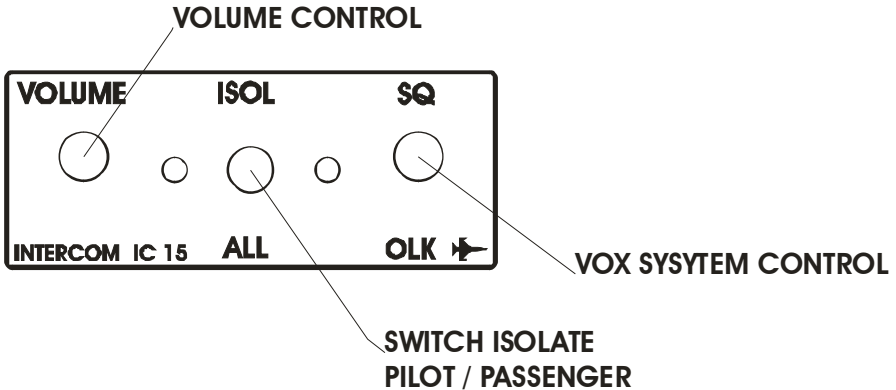
Intercom is a voice activated unit (VOX system), enabling communication between crew members, radio transmission, as well as conversation through mobile phone (see section: “phone calls”).

Intercom is equipped with VOX system – voice activation, activation threshold adjustment, volume control, pilot isolate switch for separation from co-pilot (passenger) e.g. for radio transmission.

Radio transmission is available both from pilot and co-pilot seats, with higher priority assigned to pilot – see section “distinction pilot / co-pilot”.

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Front Panel:



Adjustment Procedure:

For correct adjustment, the given below sequence of proceeding must be observed.

- **initial settings:** set the **VOLUME** control knob to the mid of range. Set the **SQ** knob of VOX system activation threshold adjustment to maximum available clockwise position. With these settings, VOX is off. Set the pilot isolate switch to **ALL**. This setting enables intercom conversation.
- **internal communication volume adjustment:** adjust volume to comfortable level while talking. **NOTE** most of modern headsets

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are equipped with extra volume control. In such case: in first instance set the volume control to mid of range , than adjust the overall intercom volume, after which each crew member can adjust the volume individually at his own headset. With intercom overall volume set to maximum, certain headset models may retune the intercom microphone channel. The intercom volume is to be reduced somewhat than.

- **adjustment of VOX system activation threshold:** in the initial phase of adjustment, the **SQ** knob has been set to maximum available clockwise position, switching the VOX “OFF”. With VOX system „OFF”, every external noise will be heard in a headset. To adjust VOX, rotate the **SQ** knob to the left slowly, until the external noise disappear. Do not use intercom, while adjusting the VOX system. After VOX adjustment the external noise should not be heard in earphones, and internal conversation is activating intercom. With VOX activation set to high – internal conversation is impossible, with setting this to low – external noise is heard in earphones. For correct operation, earphones for pilot and co-pilot should be of the same type or, at least the microphone channels should have similar parameters.
- **adjustment of radio receiver volume:** switch off the squelch of SQ transceiver and adjust the noise level with transceiver volume potentiometer so that the earphones noise is high. After this, make the communication test.

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All adjustments are to be done once, and corrected slightly if necessary. There is no need for often corrections e.g. before each flight.

Pilot Isolate Switch ALL/ISOL:

Function ISOL is for isolation of pilot from co-pilot (passenger) e.g. for radio transmission. With switch in ISOL position, the internal communication is blocked, pilot does not hear neither himself nor co-pilot (passenger) –he can conduct the external conversation instead.. Co-pilot does not hear neither pilot, nor external conversation but he can hear himself.

With switch set to ALL, both internal an external conversation is possible. Pilot and co-pilot (passenger) hear the external transmission incoming, as well as this coming out, provided the transceiver has the SIDE-TONE listening in function active.

In aircraft transmitters the SIDE-TONE function is set to activated as a standard.

PTT Transmission System:

Intercom is equipped with dual transmission system, separable and with higher priority for pilot communication.

When the pilot in command is depressing his PTT switch, he is blocking the internal communication, suppressing the incoming external transmission and blocking the transmission of co-pilot. Co-pilot can conduct communication only when pilot is not doing so. Depressing the co-pilot PTT switch is blocking the internal

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communication, suppressing the incoming external transmission but does not block the transmission of pilot.

Phone Calls:

WARNING! phone calls by mobile phone while flying are forbidden. Person calling by mobile phone during flight, makes it on his own responsibility. Producer of Intercom does not take any form of responsibility neither for the quality of phone transmission nor for the consequences resulting from phone call made during flight.

Intercom IC-15 renders possible connection of mobile phones: at input No 1 Nokia 3210; 3310; 3330; 5210; 6510; 8210; 8310; 8850; and compatible with these models, and on input No 2: Nokia 6310 and compatible with this model, also produced by other manufacturer.

Possible is conversation by pilot only, by pilot and co-pilot, as well as internal communication during phone call.

To facilitate the phone call by pilot and co-pilot at the same time, an extra switch must be installed, to short-circuit the microphone channels of pilot and co-pilot. After phone call, the switch must be set back to OFF position.

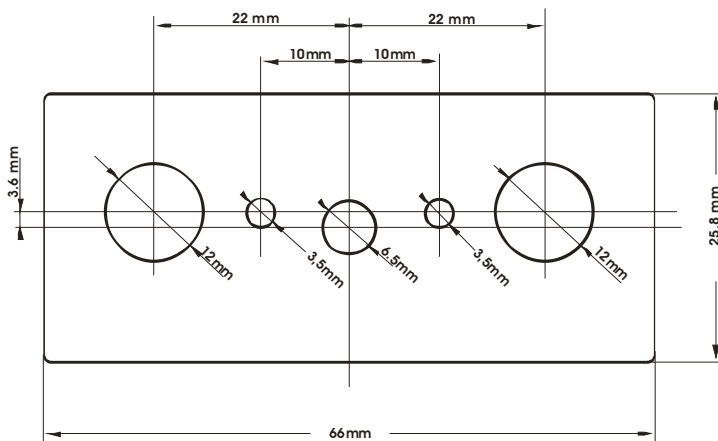
SECTION 2 - SERVICING INFORMATION

SERVICING INFORMATION

Installation:

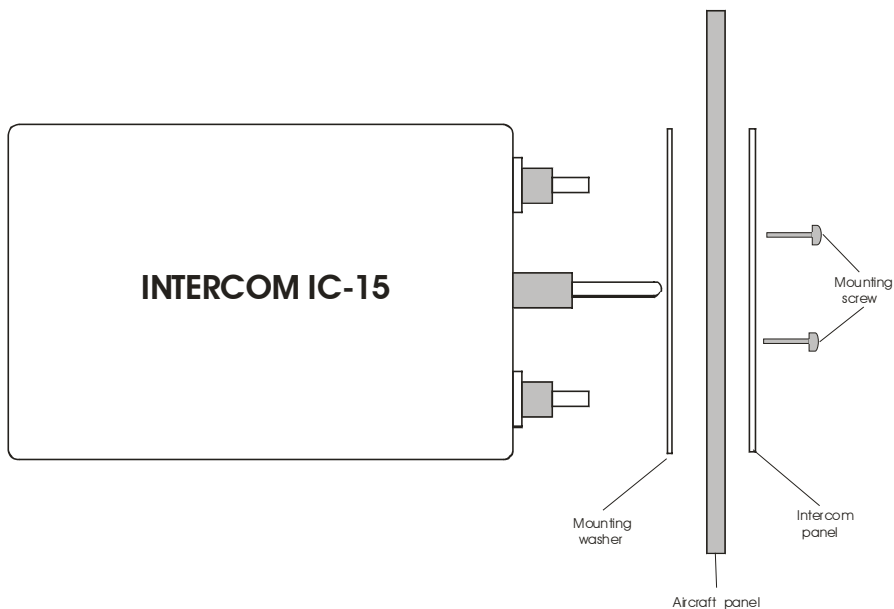
When selecting the intercom location, following aspects are to be taken into account: service accessibility, available space in, or under the accessory-, or instrument panel, control stick, or –wheel travel included! Intercom must be installed in a way not interfering with any other object, in particular with movable details of e.g. control system. For installation, the openings in the aircraft panel are to be made, according to the following sketch.

Mounting openings and outer contour



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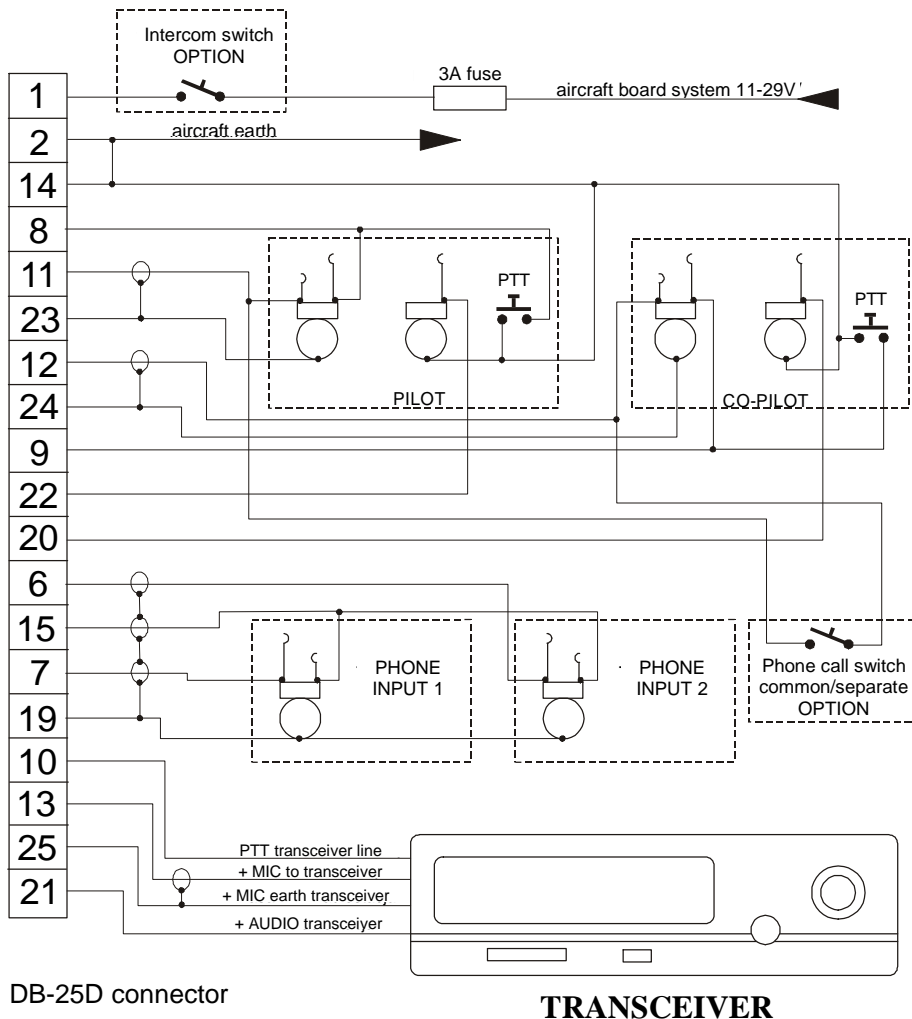
Installation in the aircraft



The mounting washers are used to support the intercom block so, that the block rests with all area of its front face against mounting panel. If the aircraft mounting panel is thick enough, to allow the intercom front face to rest on it, there is no need for spacing washers. With correct installation, the screws will not tend to “draw in” the intercom panel.

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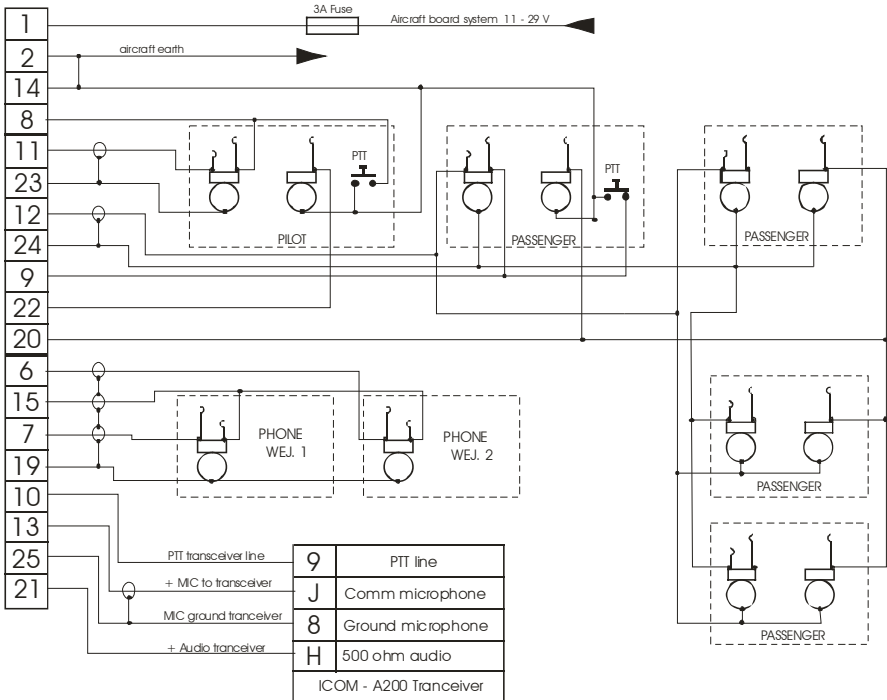
Electric wiring:



DB-25D connector

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Electric wiring for four passengers:



SECTION 2 - SERVICING INFORMATION

Pins identification

Identification of pins in DB 25 connector

1	Supply + 12 - 33 VDC	in
2	Supply earth	in
3	nc	-
4	nc	-
5	nc	-
6	+ Mic of mobile phone NOKIA 6310 & compatible	in
7	+ Mic of mobile phone NOKIA 3310 & compatible	in
8	PTT transmission button pilot 1	in
9	PTT transmission button pilot 2 (co-pilot)	in
10	PTT transceiver	out
11	+ pilot 1 Mic	in
12	+ pilot 2 Mic (co-pilot)	in
13	+ Transceiver Mic	out
14	Supply earth	in
15	+ Mobile phone Audio	in
16	nc	-
17	nc	-
18	nc	-
19	Mobile phone earth	in
20	+ headset pilot 2 (co-pilot)	out
21	+ transceiver headset (transceiver Audio)	in
22	+ headset pilot 1	out
23	pilot 1 Mic. earth	in
24	pilot 2 Mic. earth (co-pilot)	in
25	Transceiver Mic. earth	in

SECTION 2 - SERVICING INFORMATION

Configuration:

In basic version, complete Intercom consists of:

- Intercom block
- DB-25D connector + case
- Intercom panel
- 2 knobs
- 2 spacing washers

Extended version consists of basic configuration + ordered optional accessories.

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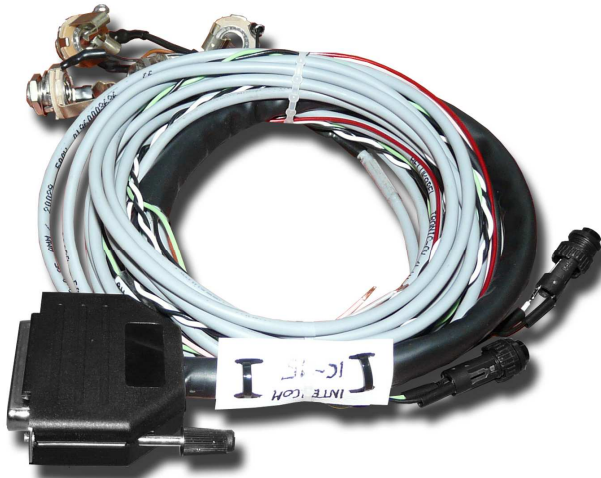
OPTIONS

Optional accessories:

Producer is offering the following optional accessories for intercom:

- complete wiring
- partial cabling
- Ready made cabling, composed of components
- case for headset jacks
- panel for headset jacks
- headset jacks

Complete wiring



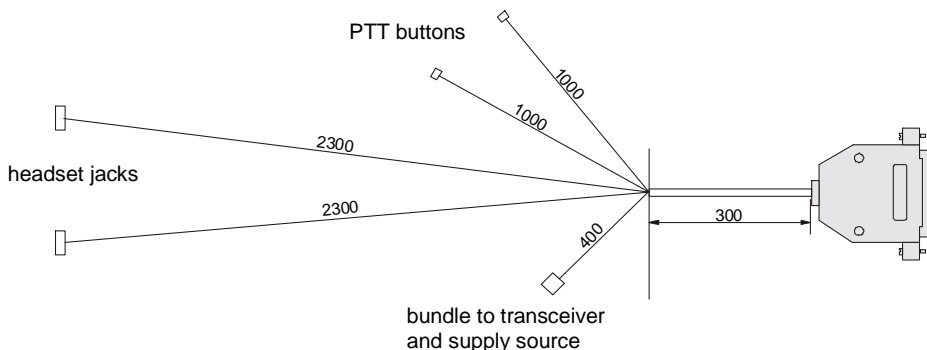
Complete wiring facilitates easy installation and connection of intercom. This is equipped with complete set of headset sockets and PTT for pilot and co-pilot. Wiring contains bundle for connection of transceiver and power supply. Connection work is limited to the

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connection to power source, and to transceiver. All wires are distinctly marked with colours, in accordance with the following list. Number of wire corresponds to a number in the DB-25D intercom connector.

wire No	Specification of wire line in transceiver
Red	Supply + 11 - 30 V
Black	Earth
Grey	Activation of transmitter in a transceiver, PTT line
Coaxial	+ transceiver Mic (+ Audio Mic)
Pink	+ transceiver headset (Audio HI)

Standardowe wymiary okablowania podane w milimetrach:



Length of wire bundles allows for installation of Intercom in almost every light aircraft.

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Partial cabling



This is the intercom adopted cabling, to which the power supply, the transceiver and the headphone sockets are to be connected. It is best suited to airplane on which the headphone sockets are located close to each other in the nose, or on airplane where the cabling of headphone sockets is provided.

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All wires to be connected are distinctly marked with colour code, to the following specification.

PIN	FUNKCJA	COLOUR
1	Power + 12 - 28 VDC	red
2	Power ground	black
3	NC	-
4	NC	-
5	NC	-
6	NC	-
7	NC	-
8	PTT push button 1 pilot (Pilot)	green
9	PTT push button 2 pilot (Co-Pilot)	white
10	PTT to transceiver	gray
11	Microphone pilot 1 (Pilot)	coax brown
12	Microphone pilot 2 (Co-Pilot)	coax brown
13	Microphone to transceiver	coax red
14	Ground for PTT push button (2 cable)	2 x black
15	NC	-
16	NC	-
17	NC	-
18	NC	-
19	NC	-
20	Hadhone 2 pilot (Co-Pilot)	coax white
21	Hadphone to tranciever (Audio transceiver)	pink
22	Hadphone 1 pilot (Pilot)	biały ekran
23	Groun for coaxial cable 1 pilot	coax to gray cable
24	Ground for coaxial cable 2 pilot	coax to gray cable
25	Groun for coaxial cable to MIC transceiver	coax to black cable

The standard length of wiring branches is given in millimeters.



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Ready made cabling, composed of components

The ready made components of cabling have been made for people aiming at easy and problem-loss installation of intercom, transceiver and remaining avionics component, without being professional avionics engineer. Components are designed so that, after selection of components suitable for the specific application, the constructor/installer has to interconnect these and attach the power supply. The selection of components consists in a choice of transceiver-intercom cabling, suitable for the installed transceiver model, and of headphone socket cable length.

The detailed information on available components is to be found in the Web site at: www.olk.com.pl.



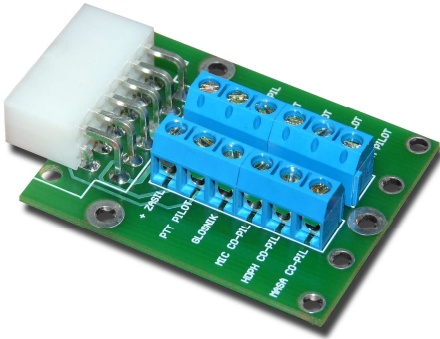
Installation connecting the IC-15 intercom with the AR 4201 transceiver.

In the offer, also installations for different transceiver model are to be found. The complete offer in the Web site at:

www.olk.com.pl

With aid of this installation, the task is limited to interconnection between intercom and transceiver, as well as connection to power source. Attachment of headphone sockets is best achieved with the connector card, specified in the next page.

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The connector card is a terminal connecting the selected intercom-transceiver wiring with other avionics components.

Every wiring is equipped with connector mating with socket in the connector card. The card is to be attached to the selected wiring, while remaining components of avionic system i.e. the headphone sockets, the pilot-, and co-pilot transmitter buttons, as well as active headphone power supply cables, if applicable, are to be



The cables connecting the pilot-, co-pilot transmitter buttons are to be attached to the card at the proper clamps.

The cables may be trimmed to the desired length. In the offer, various lengths of the concerned cables are given.

All other connections with intercom and transceiver are provided in the wiring.



The cables connecting the pilot-, co-pilot

The cables may be trimmed to the desired length. In the offer, various lengths of the concerned cables are given.

All other connections with intercom and transceiver are provided in the wiring.

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Case for Headset Jacks



The presented case allows to install the headset sockets so that the jacks are parallel to cockpit side-board. Particularly helpful in aircraft, where the sockets are installed close to seats, and the adjustable seat is passing the headset jacks. Installation of headset jacks in a case prevents breaking the jacks away.

Panel for Headset Jacks



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This is a decorative stopper with "PILOT" on one side, and "CO-PILOT" on opposite. Prevents erroneous connection of pilot and co-pilot headsets.

Headset Sockets



Sockets are necessary for connection of pilot, and co-pilot headsets.