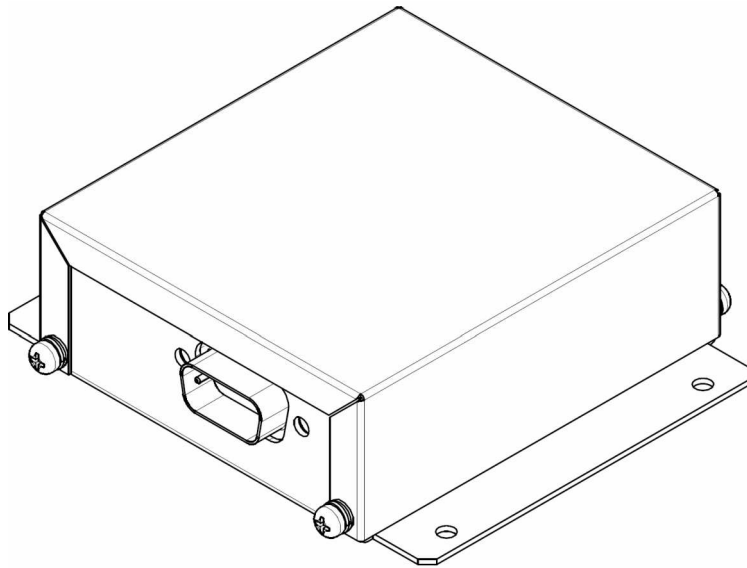


Easy Control Interface



Installation Manual



P/N: TLX-6552X-DI-001-PrA

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Table of contents

TABLE OF CONTENTS	II
1 REVISION TABLE	1-1
2 GENERAL DESCRIPTION	2-1
2.1 GENERAL INFORMATION.....	2-1
2.2 LIMITED WARRANTY.....	2-1
3 TECHNICAL SPECIFICATIONS – EASY CONTROL INTERFACE	3-1
4 INSTALL RECOMMENDATION	4-1
4.1 INTRODUCTION.....	4-1
4.2 LOCATION CONSIDERATION.....	4-1
4.3 INSTALLATION.....	4-1
4.4 RECOMMENDED WIRING PRACTICES.....	4-1
4.5 HARNESS MATING.....	4-1
4.6 POWER REQUIREMENTS.....	4-1
4.7 WIRING OVERVIEW.....	4-1
5 MECHANICAL DRAWING – EASY CONTROL INTERFACE	5-1
5.1 FRONT VIEW.....	5-1
5.2 SIDE VIEW.....	5-1
5.3 TOP VIEW.....	5-2
6 ELECTRICAL DRAWING	6-1
6.1 PIN FUNCTION LIST FOR EASY CONTROL INTERFACE.....	6-1
6.2 PIN FUNCTION LIST FOR JOYSTICK CONTROLLER.....	6-2
6.2.1 <i>Main Interconnection</i>	6-3
6.2.2 <i>iFamily® Interconnection</i>	6-4
7 CONCLUSION	7-1

1 Revision Table

Rev	Revision Date	Description	ECO#	Insertion date	By
PrA	06.02.2014	Initial version			VH

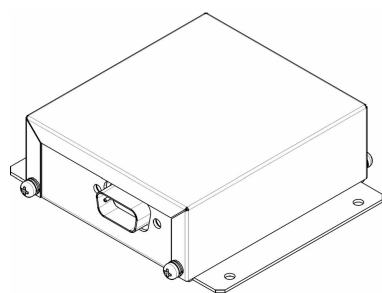
2 General description

2.1 General Information

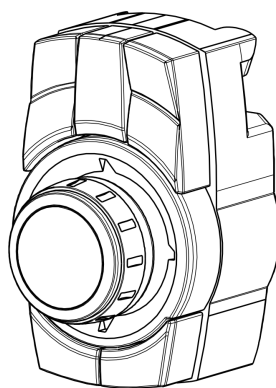
Easy Control system includes TL-6552 Easy Control Interface and Joystick Controller. The system has been developed to provide you with easier and safer control of your Glass Cockpit INTEGRA.

Joystick Controller replicates the right-hand or left-hand knob and the buttons on INTEGRA. For example set barometric pressure, radio frequency, transponder squawk, switching between screens etc.

TL-6552 Easy Control Interface is device providing interface for communication between the INTEGRA Glass Cockpit and the Joystick Controller.



TL-6552 Easy Control Interface



Joystick Controller

2.2 Limited Warranty

This manual contains important information that may affect the safety of the pilot, passengers, aircraft and operation of the system or time to install the system. You **MUST** read the manual prior to installing this system. Any deviation from these installation instructions is the sole responsibility of the installer and should be done in accordance with AC 43.13. Read the Warranty/Agreement. There is information in the Warranty/Agreement that may alter your decision to install this product. If you do not accept the terms of the Warranty/Agreement, do not install this product. This product may be returned for a refund. Contact TL elektronik for details.

⚡ WARNING: If the installer does not have the skills, knowledge, tools, equipment or facility, to perform and determine whether the installation of this product is safe, reliable and accurate and to determine whether this product is operating properly after installation, **DO NOT INSTALL THIS PRODUCT**. If the owner/pilot and/ or installer are unwilling to take the responsibility for the installation and operation of this product, **DO NOT INSTALL THIS PRODUCT**. This product may be returned for a refund. Contact TL elektronik for details.

- ⓘ NOTE:** By installing this product, the aircraft owner/pilot and installer agrees to hold TL-elektronik in no way responsible for monetary compensation, including punitive damages for any incident, harm and/or damage associated with this product. If you do not agree to the above, **DO NOT INSTALL THIS PRODUCT**. This product may be returned for a refund. Contact TL elektronik for details.
- ⓘ NOTE:** TL-elektronik is not liable or responsible for a pilot's action or any situation that results in personal injury, property damage, missed commitments, lack of use of an aircraft or any expenses incurred due to: product failure, inaccuracy in data provided, format issues, software bugs or problems, upgrade or customization issues, misinterpretation of data, calibration problems, installation issues (leaks, incorrect wiring, obstructions, damage to aircraft or components, incorrect installation of any parts, wrong parts, parts that don't fit, etc.) or any other issues related to the installation or operation of this product. All of the above are solely the pilot's and/or installer's responsibility. The pilot must understand the operation of this product before flying the aircraft. The pilot will not allow anyone to operate the aircraft that does not know the operation of this product.
- ⚡ WARNING:** Do not install a non-certified Easy Control Interface and non-certified Joystick Controller in a certified aircraft.

3 Technical Specifications – Easy Control Interface

Physical characteristic

Width	90 mm	3,543”
Height	28,5 mm	1,122”
Depth	76 mm	2,992”
Weight	100 g	0,22 lb

General Specifications

Operating Temperature Range	- 30°C to +70°C
Humidity	95% non-condensing
Altitude Range	9750 meters max (32000 feet max)
Power Range	10 to 32 Volts
Power Consumption	0,18 Ampere @ 14 VDC (incl. Joystick Controller)
Vibration	5 to 500 Hz

Communication

CAN BUS (iFamily® BUS)	250 kbps
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4 Install Recommendation

4.1 Introduction

The performance and reliability of the Easy Control system is determined by careful planning and consideration in its installation. Please follow the suggested guidelines.

4.2 Location Consideration

Choose location where Joystick Controller could be easily reached for comfortable operation.

4.3 Installation

The diagram below shows the outer dimensions of the Easy Control Interface.

4.4 Recommended Wiring Practices

For all electrical connections, use correct wiring techniques, taking care to properly insulate any exposed wire or cables. A short circuit between any of the wires may cause damage to the Easy Control and/or your aircraft. Make all connections to your harness before connecting it to any of the components of the electrical system. Do not make connections while the Easy Control Interface and/or Joystick Controller is turned on or power is applied to any point in the electrical system. We recommend that all wire you use also meets 22 AWG Mil Standard MIL-W-22759/16. When using any pre-manufactured harness, verify that each pin has continuity with the expected wire on the wiring diagram. This test can be easily done with a multi-meter. When verifying harnesses, use the wiring charts and diagrams in this guide. Use appropriate strain relief at all junctions between wires and connectors. We recommend that you secure all wires at regular intervals along wiring runs to accommodate vibration effects.

4.5 Harness Mating

Section 6.1 describes the connector on the Easy Control Interface. The connector is used for power supply and communication with the other equipment.

Section 6.2 describes the connector on the Joystick Controller. The connector is used for power supply and communication with the Easy Control Interface.

4.6 Power Requirements

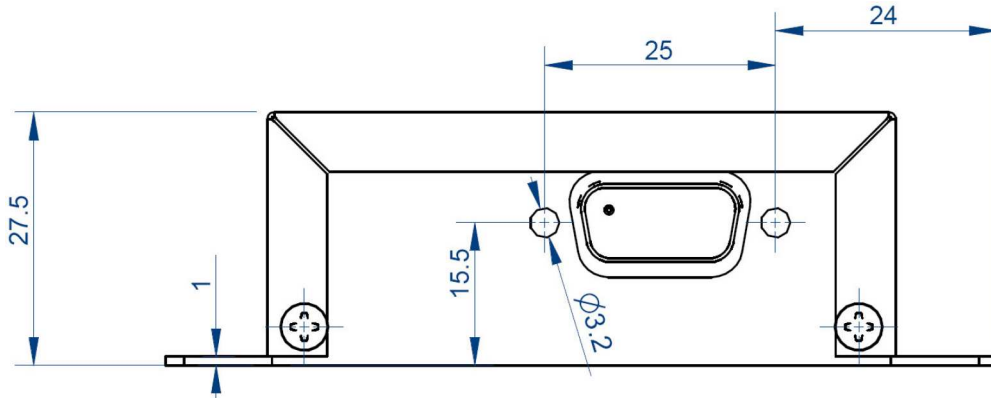
22 AWG wire is normally sufficient for the power supply and grounding, but we recommend that you consult a wire sizing chart and determine the size required for the wire routing in your particular aircraft. Ensure that the power supply include a circuit breaker

4.7 Wiring Overview

The Easy Control system power requirement is as low as 0,18 amps in a 12/24 volt system. And therefore you can use a 1-amp circuit breaker. See the technical specification chart for details.

5 Mechanical Drawing – Easy Control Interface

5.1 Front View



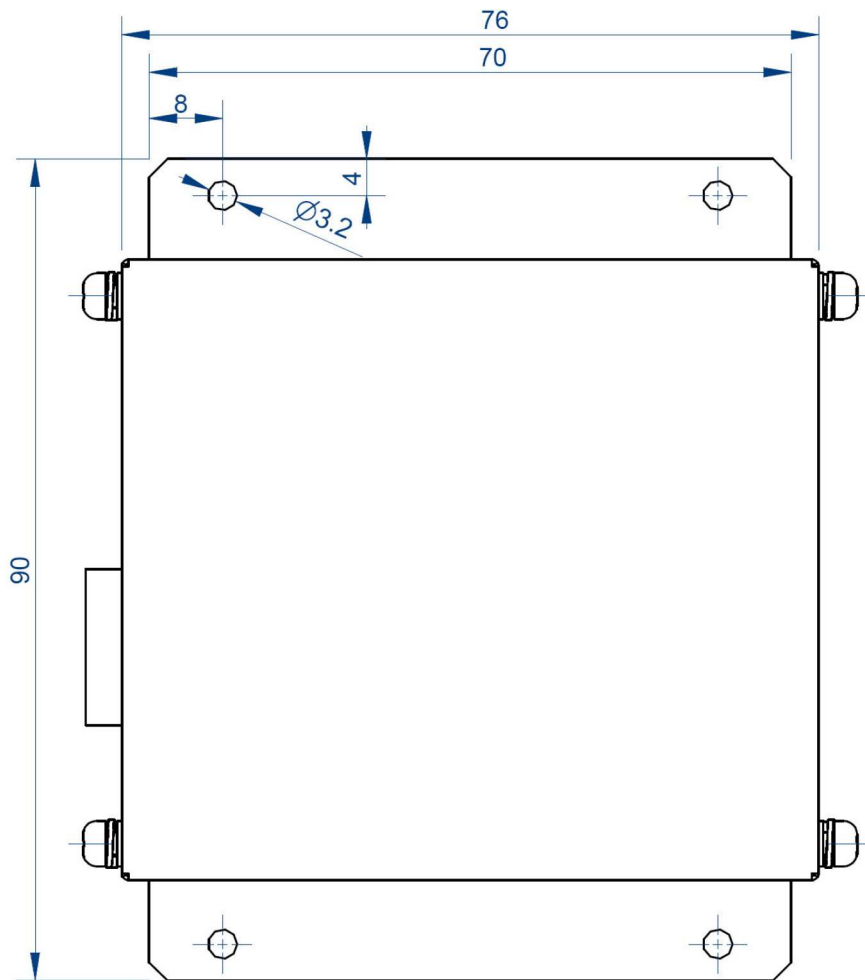
NOTE: All measurements are in millimeters.

5.2 Side View



NOTE: All measurements are in millimeters

5.3 Top View

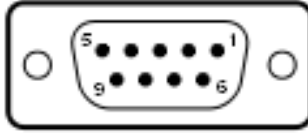


NOTE: All measurements are in millimeters.

6 Electrical Drawing

6.1 PIN FUNCTION list for Easy Control Interface

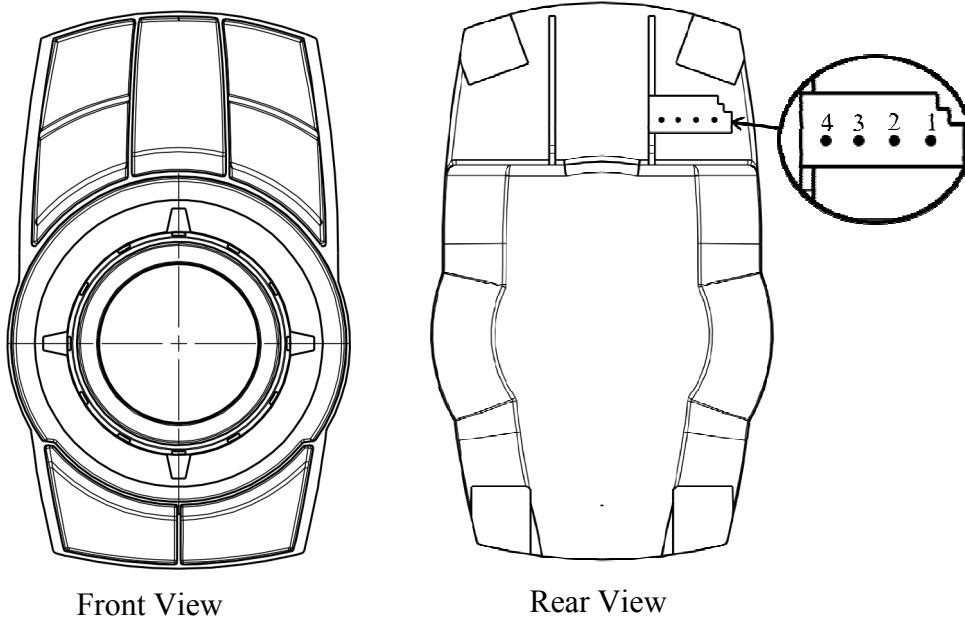
Complementary accessory – type: D-SUB9 – Female (connector to Easy Control Interface)



Main Connector – type: D-SUB9 – Male (connector on Easy Control Interface)

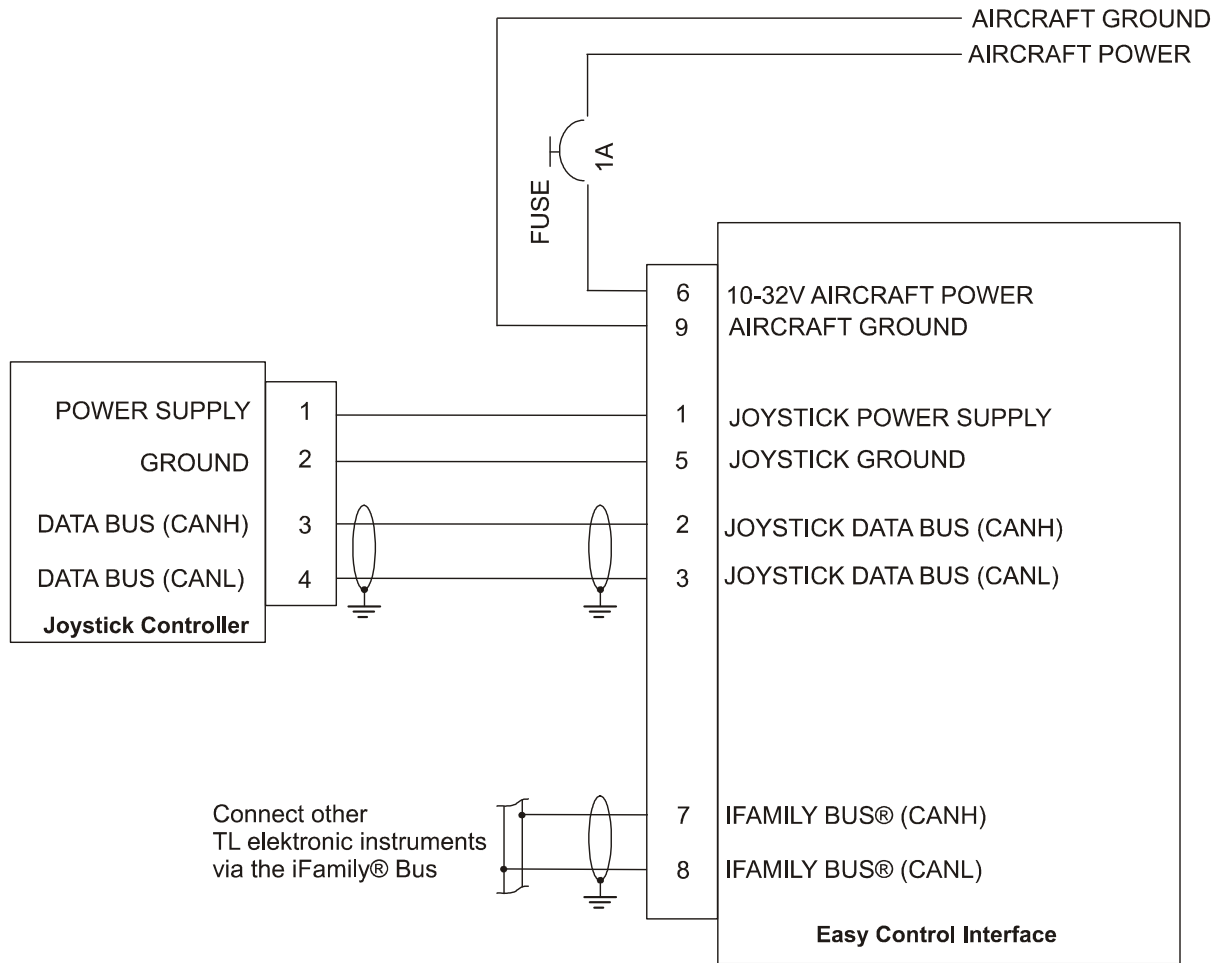
Pin	Pin Name	I/O
1	Joystick Power Supply	Out
2	Joystick Data Bus (CANH)	In/Out
3	Joystick Data Bus (CANL)	In/Out
4	N/A	--
5	Joystick Ground	--
6	Aircraft Power (10 to 32V)	In
7	iFamily® Bus (CANH)	In/Out
8	iFamily® Bus (CANL)	In/Out
9	Aircraft Ground	--

6.2 PIN FUNCTION list for Joystick Controller



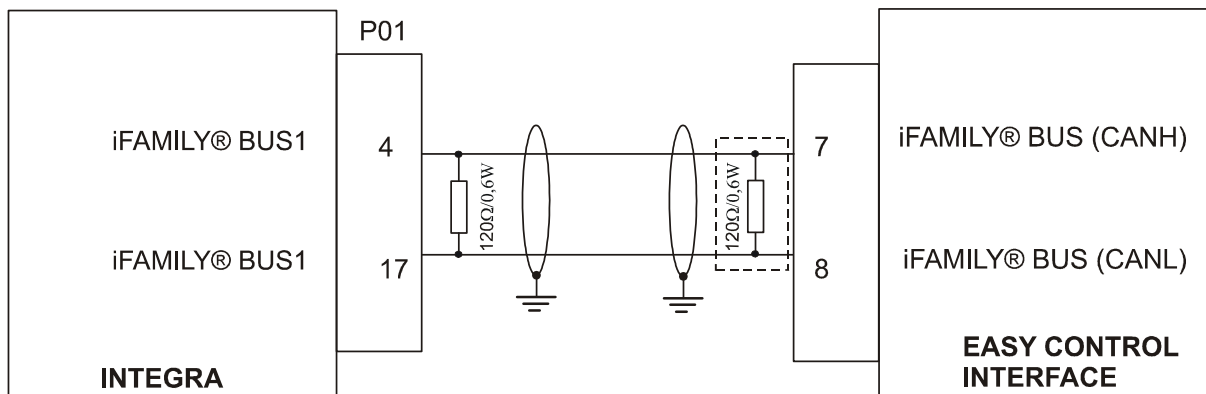
Pin	Pin Name	I/O
1	Power Supply	In
2	Ground	--
3	Data Bus (CANH)	In/Out
4	Data Bus (CANL)	In/Out

6.2.1 Main Interconnection



NOTE: CAN bus line between Joystick Controller and Easy Control Interface is dedicated bus and it is not compatible with iFamily® bus. Therefore it cannot be connected to iFamily® bus or other CAN bus line.

6.2.2 iFamily® Interconnection



- NOTE:** It is necessary to terminate the bus at both ends with 120 ohm resistors. The resistors are there to prevent reflections of communication on the bus. On one bus there is possible to have only two resistors!

7 Conclusion

INSTRUCTIONS FOR RETURN

If none of the above sections have helped resolve an ongoing issue with your Easy Control system, please call TL elektronik at +420 495 48 23 93 to discuss the issue with Technical Support.

In case the issue cannot be resolved, we will provide you with an RMA number to use when shipping the Servo to us. If your unit is still under warranty, the repairs will be performed and the Servo will be returned promptly. If your warranty has expired, the TL elektronik representative will make arrangements with you and make you fully aware of the costs before proceeding with the repair.

While TL elektronik makes every effort to save and restore your unit's settings and calibrations, we cannot guarantee that this will happen. Please note that after you receive your unit back from TL elektronik with a factory calibration, the servo may be inaccurate once re-installed in your aircraft.