

IF11



- Contactless and bounce-free commutation of all signals via remote 24V control signal
- Automatic synchronization of the changeover point to the next SSI transmission pause
- Slim and space-saving housing for DIN rail mounting
- Cascadable for several SSI encoders
- All connections via screw terminal blocks

Suitable for the following models:

- IF11

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The logo for Lika Electronic s.r.l. features the word "lika" in a bold, lowercase, sans-serif font. The letter "i" has a dot, and the "a" has a tail that extends to the right.

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Typographic and iconographic conventions

In this guide, to make it easier to understand and read the text the following typographic and iconographic conventions are used:

- parameters and objects both of the device and the interface are coloured in **GREEN**;
- alarms are coloured in **RED**;
- states are coloured in **FUCSIA**.

When scrolling through the text some icons can be found on the side of the page: they are expressly designed to highlight the parts of the text which are of great interest and significance for the user. Sometimes they are used to warn against dangers or potential sources of danger arising from the use of the device. You are advised to follow strictly the instructions given in this guide in order to guarantee the safety of the user and ensure the performance of the device. In this guide the following symbols are used:

	This icon, followed by the word WARNING , is meant to highlight the parts of the text where information of great significance for the user can be found: user must pay the greatest attention to them! Instructions must be followed strictly in order to guarantee the safety of the user and a correct use of the device. Failure to heed a warning or comply with instructions could lead to personal injury and/or damage to the unit or other equipment.
	This icon, followed by the word NOTE , is meant to highlight the parts of the text where important notes needful for a correct and reliable use of the device can be found. User must pay attention to them! Failure to comply with instructions could cause the equipment to be set wrongly: hence a faulty and improper working of the device could be the consequence.
	This icon is meant to highlight the parts of the text where suggestions useful for making it easier to set the device and optimize performance and reliability can be found. Sometimes this symbol is followed by the word EXAMPLE when instructions for setting parameters are accompanied by examples to clarify the explanation.

Preliminary information

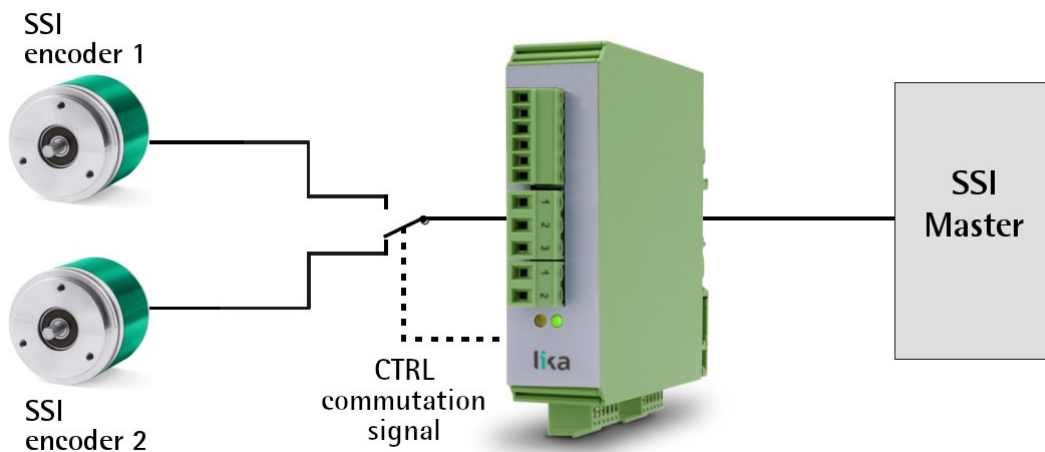
This guide is designed to provide the most complete information the operator needs to correctly and safely install and operate the **IF11 changeover switch for SSI encoders**.

IF11 is designed for contactless commutation between two SSI encoders and one SSI Master unit. The switching operation is under control of a remote signal (HTL, 24 volts). Moreover there is an automatic internal synchronisation to the next SSI signal pause, avoiding fragmented SSI telegrams and wrong information while commutation is in progress.

Typical applications can be found in handling and conveyor technology, where one Master unit must evaluate the signals of two sensors for summing or differential information. Also with drives and automation we can find applications such as automatic roll change "on the fly", or with redundant systems using several encoders for safety etc.

IF11 uses a narrow and space-saving plastic housing, suitable for DIN rail mounting.

The block diagram below shows all main functions.



For technical specifications please refer to the product datasheet.

1 - Safety summary



1.1 Safety

- Always adhere to the professional safety and accident prevention regulations applicable to your country during device installation and operation;
- installation and maintenance operations have to be carried out by qualified personnel only, with power supply disconnected and stationary mechanical parts;
- device must be used only for the purpose appropriate to its design: use for purposes other than those for which it has been designed could result in serious personal and/or the environment damage;
- high current, voltage and moving mechanical parts can cause serious or fatal injury;
- warning ! Do not use in explosive or flammable areas;
- failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the equipment;
- Lika Electronic assumes no liability for the customer's failure to comply with these requirements.



1.2 Electrical safety

- Turn OFF power supply before connecting the device;
- connect following to explanation in the "4 - Electrical connections" section on page 11;
- in compliance with 2014/30/EU norm on electromagnetic compatibility, following precautions must be taken:
 - before handling and installing the equipment, discharge electrical charge from your body and tools which may come in touch with the device;
 - power supply must be stabilized without noise; install EMC filters on device power supply if needed;
 - always use shielded cables (twisted pair cables whenever possible);
 - avoid cables runs longer than necessary;
 - avoid running the signal cable near high voltage power cables;
 - mount the device as far as possible from any capacitive or inductive noise source; shield the device from noise source if needed;
 - minimize noise by connecting the unit to ground (GND). Make sure that ground (GND) is not affected by noise. The connection point to ground can be situated both on the device side and on user's side. The best solution to minimize the interference must be carried out by the user.



1.3 Mechanical safety

- Install the device following strictly the information in the "3 - Mounting instructions" section;
- do not disassemble the unit;
- do not tool the unit;

- delicate electronic equipment: handle with care;
- do not subject the device to knocks or shocks;
- respect the environmental characteristics of the device.

2 - Identification

Device can be identified through the **order code** and the **serial number** printed on the label applied to its body. Information is listed in the delivery document too. Please always quote the order code and the serial number when reaching Lika Electronic for purchasing spare parts or needing assistance. For any information on the technical characteristics of the product, refer to the technical catalogue.



Warning: devices having order code ending with "/Sxxx" may have mechanical and electrical characteristics different from standard and be supplied with additional documentation for special connections (Technical info).

3 - Mounting instructions

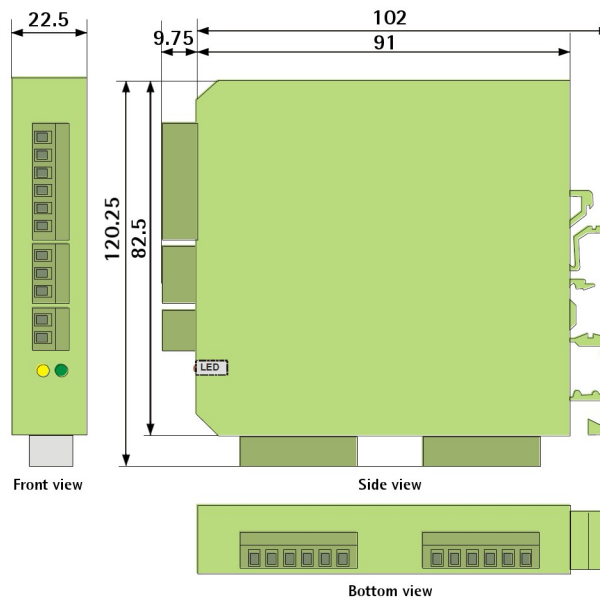


WARNING

Installation and maintenance operations have to be carried out by qualified personnel only, with power supply disconnected and mechanical parts compulsorily in stop.

3.1 Overall dimensions

IF11 changeover switch must be installed and protected inside the electric panel. It provides DIN rail mounting and can quickly snap onto a DIN rail with built-in DIN rail clips that require no additional brackets or supports.



3.2 Installation notes

The device is only allowed to be installed and operated within the permissible temperature range (0°C +45°C / +32°F +113°F). Please ensure an adequate ventilation and avoid all direct contact between the device and hot or aggressive gases and liquids.

Before installation or maintenance, the unit must be disconnected from all voltage sources. Furthermore it must be ensured that no danger can arise by touching the disconnected voltage sources.

All selected wires and insulations must comply with the provided voltage and temperature ranges. In addition all country and application-specific standards, which are relevant for structure, form and quality of the wires, must be ensured. Before first start-up it must be ensured that all connections and wires are firmly in place and secured to the screw terminals. All (inclusive unused) terminals must be fastened by turning the relevant screws clockwise up to the stop.

3.3 Cleaning, maintenance and service notes

To clean the front of the unit please use only a slightly damp (not wet!), soft cloth. For the rear no cleaning is necessary. For an unscheduled, individual cleaning of the rear the maintenance staff or assembler is self-responsible.

During normal operation no maintenance is necessary. In case of unexpected problems, failures or malfunctions the device must be shipped back to the manufacturer for maintenance check, adjustment and repair (if necessary). Unauthorized opening and repair can have negative effects or failures to the measures of protection of the unit.

4 - Electrical connections

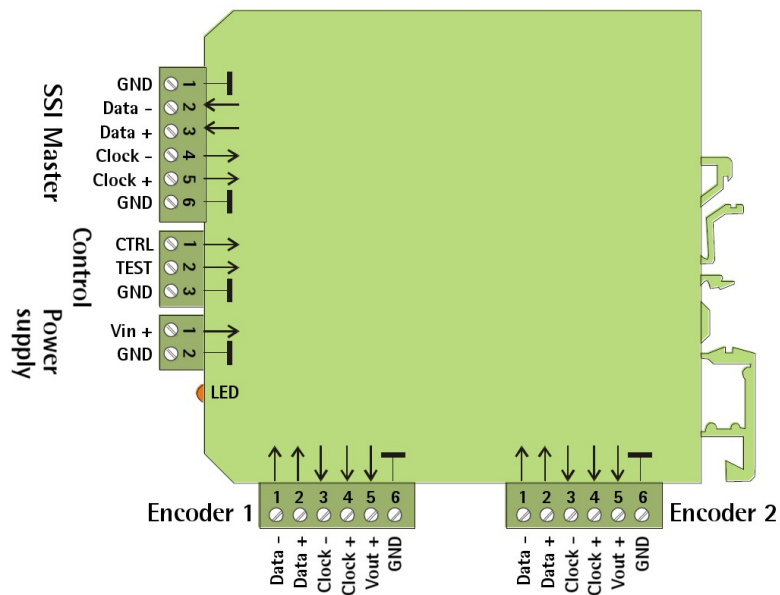


WARNING

Power supply must be turned off before performing any electrical connection!

The terminal block screws must be tightened using a slotted screwdriver having a 2 mm wide blade.

For the wiring of the unit there are totally 5 terminal blocks available, all with screw terminal connectors as shown in the drawing below.



4.1 Power supply

For power supply the unit requires a **supply voltage from 12Vdc to 30Vdc**, it must be applied to the terminals marked "Power supply".

The same voltage will be provided as an auxiliary output to the "Encoder 1" and "Encoder 2" terminals, for supply of the connected SSI encoders. It corresponds to the power supply voltage minus approx. 2V.

4.2 Control terminal block

Refer to the "5 - Switchover procedure" section on page 13.

4.2.1 Test input

The Test input at Control terminal block is only for factory test purpose. Not to be used by user. Please leave it unconnected.

4.3 Diagnostic LEDs

Two LEDs are available in the front of the unit for diagnostics.

LED	Meaning
Green LED	It shows the current state of power supply
OFF	The unit power supply is switched OFF
ON (lit green)	The unit power supply is switched ON
Yellow LED	It shows the switching state of the encoder switch
OFF	Encoder 1 is connected to the Master
ON (lit yellow)	Encoder 2 is connected to the Master

5 – Switchover procedure

The switchover sequence operates under control of the logical level of the CTRL input terminal (see the "Control" terminal block):

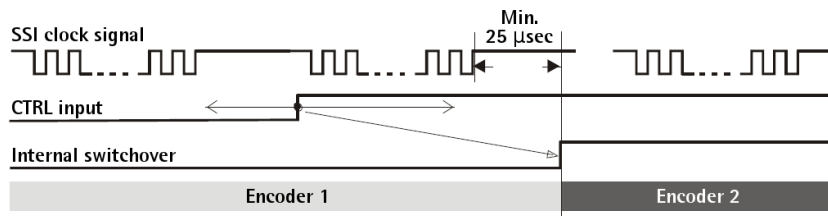
CTRL = LOW:

Encoder 1 is connected to the Master (the yellow LED is OFF, see on the previous page)

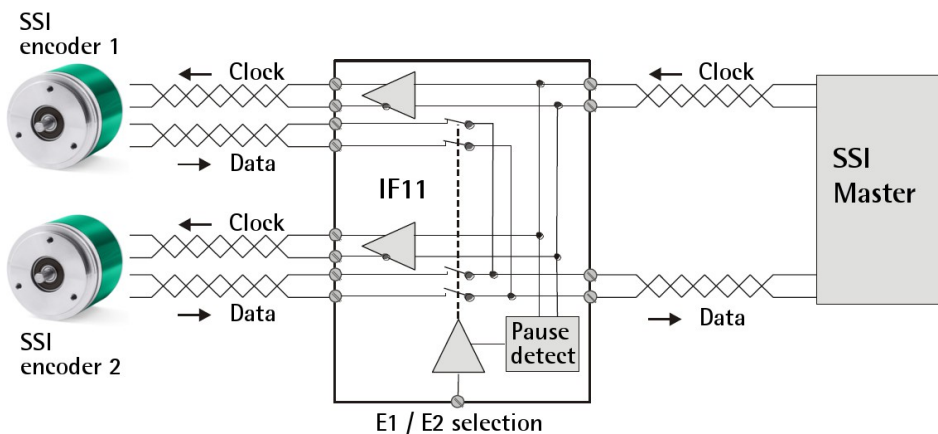
CTRL = HIGH:

Encoder 2 is connected to the Master (the yellow LED is ON, see on the previous page)

The commutation from one encoder to the other takes place after the idle time between two SSI telegrams following to the signal change on the CTRL terminal. To ensure proper switchover, a minimum SSI pause of 25 μ sec is necessary. Refer to the following scheme.



Functional diagram



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Document release	Release date	Description
1.0	09.10.2019	First issue
1.1	21.04.2020	Description of Test input



Dispose separately

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