

User Manual

Revision 3.101

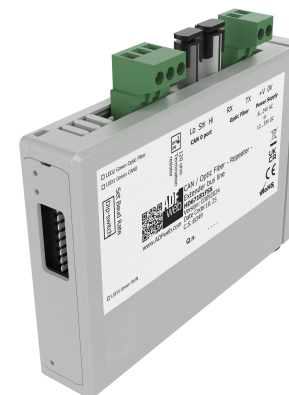
English

CAN / Optic Fiber – Repeater – Extender bus line

(Order Code: HD67117FSX
HD67180FSX
HD67181FSX
HD67182FSX)

Benefits and Main Features:

- ✦ Different baud rate of CAN branches
- ✦ Triple electrical isolation
- ✦ Protocol independent, allowing it to work with all the different CAN protocols and frame lengths
- ✦ Temperature range: -40°C/+85°C (-40°F/+185°F)



All Repeaters

See also the following links:

www.adfweb.com?Product=HD67117FSX (For CANopen)
www.adfweb.com?Product=HD67180FSX (For DeviceNet)
www.adfweb.com?Product=HD67181FSX (For CAN 2.0A & 2.0B)
www.adfweb.com?Product=HD67182FSX (For J1939)

Copper Cables Repeaters

See also the following links:

www.adfweb.com?Product=HD67117 (For CANopen)
www.adfweb.com?Product=HD67180 (For DeviceNet)
www.adfweb.com?Product=HD67181 (For CAN 2.0A & 2.0B)
www.adfweb.com?Product=HD67182 (For J1939)
www.adfweb.com?Product=HD67221 (Filter CAN to CAN)

Do you have an your customer protocol?

See the following links:

www.adfweb.com?Product=HD67003

Do you need to choose a device? do you want help?

Ask it to the following link:

www.adfweb.com?Cmd=helpme



User Manual

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UPDATED DOCUMENTATION:

Dear customer, we thank you for your attention and we remind you that you need to check that the following document is:

- ✦ Updated
- ✦ Related to the product you own

To obtain the most recently updated document, note the "document code" that appears at the top right-hand corner of each page of this document.

REVISION LIST:

Revision	Date	Author	Chapter	Description
3.002	15/02/2013	Nt	All	Added new chapters
3.100	23/09/2015	Ff	All	New hardware version FSX
3.101	28/03/2025	Ln	All	New design

WARNING:

ADFweb.com reserves the right to change information in this manual about our product without warning.
ADFweb.com is not responsible for any error this manual may contain.

TRADEMARKS:

All trademarks mentioned in this document belong to their respective owners.

SECURITY ALERT:**GENERAL INFORMATION**

To ensure safe operation, the device must be operated according to the instructions in the manual. When using the device, legal and safety regulation are required for each individual application. The same applies also when using accessories.

INTENDED USE

Machines and systems must be designed so the faulty conditions do not lead to a dangerous situation for the operator (i.e. independent limit switches, mechanical interlocks, etc.).

QUALIFIED PERSONNEL

The device can be used only by qualified personnel, strictly in accordance with the specifications.

Qualified personnel are persons who are familiar with the installation, assembly, commissioning and operation of this equipment and who have appropriate qualifications for their job.

RESIDUAL RISKS

The device is state-of-the-art and is safe. The instruments can represent a potential hazard if they are inappropriately installed and operated by untrained personnel. These instructions refer to residual risks with the following symbol:



This symbol indicates that non-observance of the safety instructions is a danger for people that could lead to serious injury or death and / or the possibility of damage.

CE CONFORMITY

The declaration is made by our company. You can send an email to support@adfweb.com or give us a call if you need it.

INTRODUCTION:

The “HD671XXFSX” serie is CAN Bus devices designed to extend high CAN bus signals to Fiber Optic cables, providing RFI and electrical isolation. These CAN bus bridges and repeaters support the CAN-based higher level protocols.

BENEFITS AND CHARACTERISTICS:**Benefits:**

- Naturally Resistant to Surges, Spikes and Electrical Noise;
- Multi Modal Optic Fiber up to 2000 meters;
- MAX baudrate 1Mbps;
- Allows extension of a line segment (without lowering the Baudrate);
- Extension of nodes number;
- Different baud rate setting;
- CAN Protocol independent;
- Rail DIN mounting;
- Removable terminal block;
- Low Cost.

Characteristics:

- Electrical isolation ISO 11898/ISO IEC 11801
- Optical link: UP 2000 metres at 1Mbps;
- Copper link: 5000 m for 10Kbps and 25m for 1Mbps;
- Baud rate from 10kbps up to 1Mbps;
- Possible different baudrate setting (into different branches)
- Temperature range: -40°C/+85°C (-40°F/+185°F)
- Mountable on Rail Din.

"FSX" SERIES

Bridges and repeaters for CANbus, CANopen, DeviceNet, J1939, CAN2.0A, CAN2.0B:

HD67117FSX CANopen to Optic Fiber Repeater;

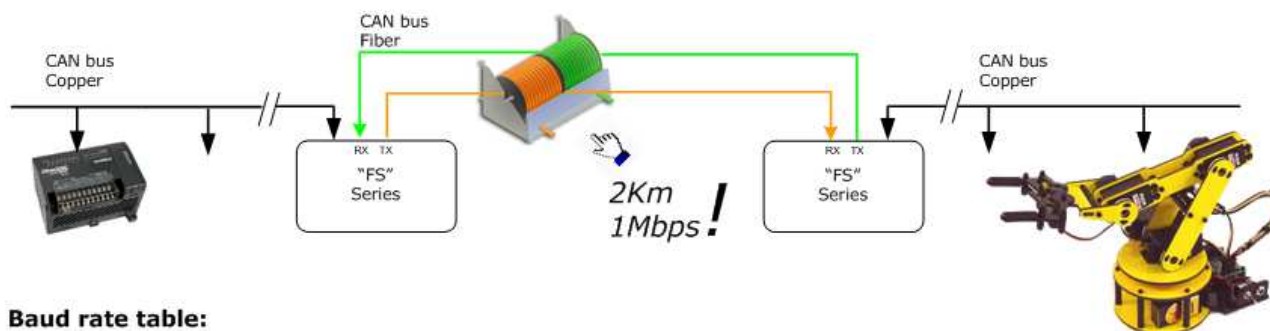
HD67180FSX DeviceNet to Optic Fiber Repeater;

HD67181FSX CAN to Optic Fiber Repeater for generic use (Standard and Extended Protocol);

HD67182FSX J1939 to Optic Fiber Repeater.

These series of device use the large bandwidth of optics fibres for extend the CAN bus link.

Function scheme:



Baud rate table:

Copper Side:

Baud rate [bps]	Length max [m]
10 K	5000
20 K	2500
50 K	1000
100 K	650
125 K	500
250 K	250
500 K	100
800 K	50
1000 K	25

Fiber Optic Side: (*)

Baud rate [bps]	Length max [m]
10 K	2000
20 K	2000
50 K	2000
100 K	2000
125 K	2000
250 K	2000
500 K	2000
800 K	2000
1000 K	2000

www.ADFweb.com

(*) Fiber optic 62.5/125µm

Figure 1: Function scheme and Baud rate table for "FSX" series

CONNECTION SCHEME:

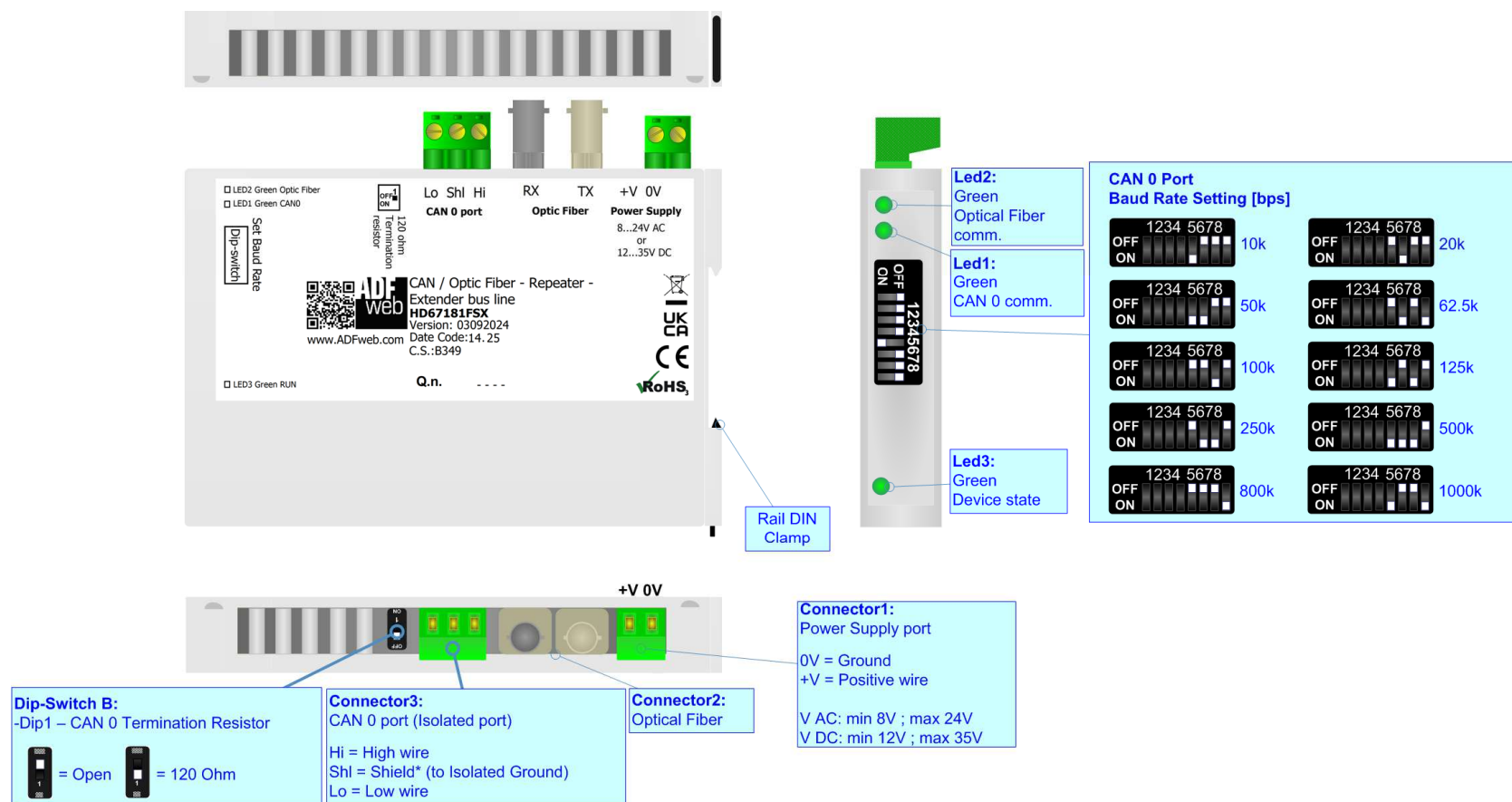




Figure 2: Connection scheme for HD671xxFSX

POWER SUPPLY:

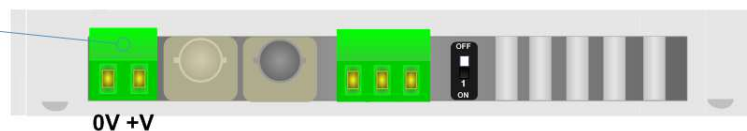
The devices can be powered at 8...24V AC and 12...35V DC. For more details see the two tables below.

	VAC 		VDC 	
	Vmin	Vmax	Vmin	Vmax
Series FSX	8V	24V	12V	35V

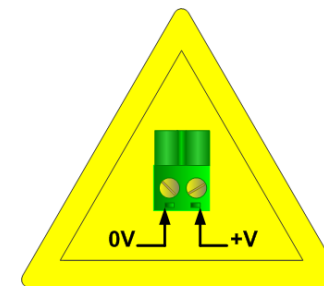
Consumption at 24V DC:

Device	Consumption [W/VA]
Series FSX	3.5

Connector1:
Power Supply port
0V = Ground
+V = Positive wire
V AC: min 8V ; max 24V
V DC: min 12V ; max 35V



Caution: Not reverse the polarity power

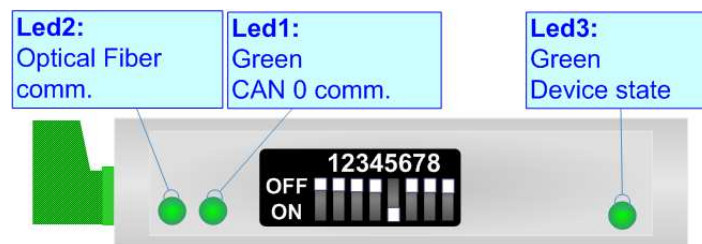


HD671xxFSX

LEDS:

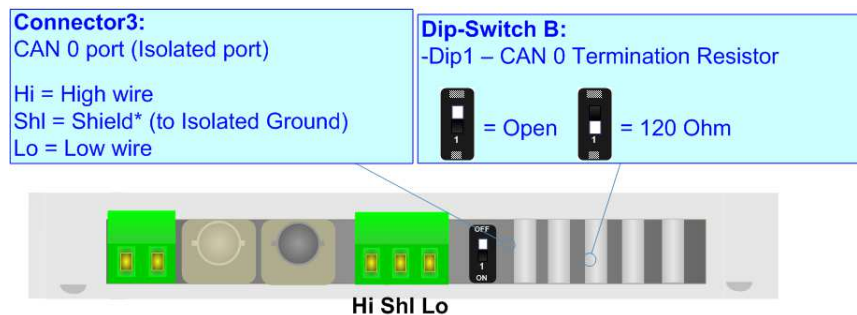
The devices have got three green LEDs that are used to give information of the functioning status.
The various meanings of the LEDs are described in the table below.

LED	Normal Mode	Boot Mode
1: CAN 0 comm. (green)	Changes state when a CAN 0 message arrives	Blinks quickly: Boot state
2: Optic Fiber comm. (green)	Changes state when a Optic Fiber message arrives	Blinks quickly: Boot state
3: Device State (green)	Blinks slowly (~1Hz)	Blinks quickly: Boot state



CAN:

For terminating the CAN 0 line with a 120Ω resistor it is necessary that the Dip1 of 'Dip-Switch B' is at ON position.



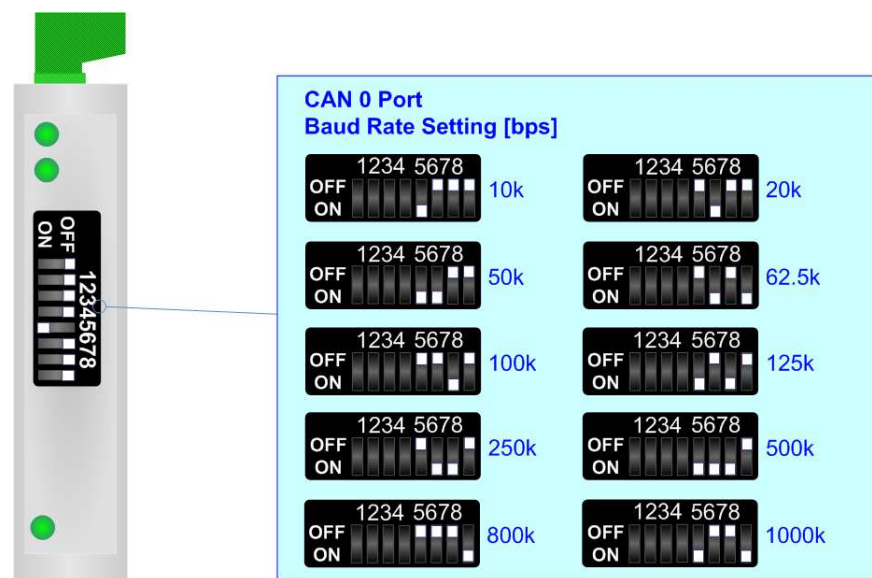
Cable characteristics:

DC parameter:		Impedance	70 Ohm/m
AC parameters:		Impedance	120 Ohm/m
		Delay	5 ns/m
Length		Baud Rate [bps]	Length MAX [m]
		10 K	5000
		20 K	2500
		50 K	1000
		100 K	650
		125 K	500
		250 K	250
		500 K	100
		800 K	50
		1000 K	25

SET SWITCH BAUD RATE:

The switches for setting the CAN0 baud rate on the front panel of the device:

Dip n° 5, 6, 7, 8 CAN0 setting.



MECHANICAL DIMENSIONS:

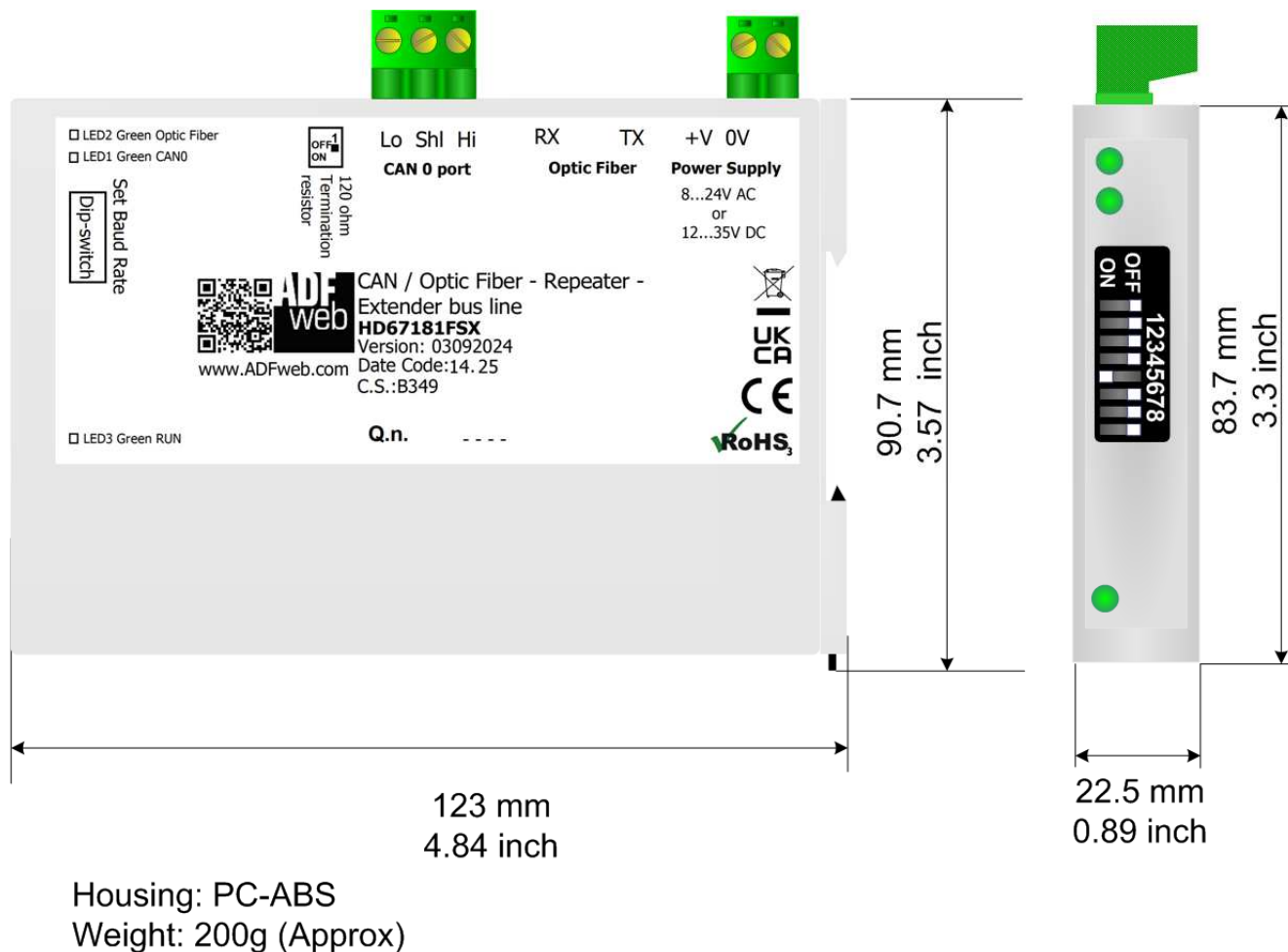


Figure 3: Mechanical dimensions for HD671xxFSX

ORDER CODE:

- Order Code: **HD67117FSX** - CANopen / Optic Fiber – Repeater – Extender bus line (High Performance)
- Order Code: **HD67180FSX** - DeviceNet / Optic Fiber – Repeater – Extender bus line (High Performance)
- Order Code: **HD67181FSX** - CAN / Optic Fiber – Repeater – Extender bus line (High Performance)
- Order Code: **HD67182FSX** - J1939 and NMEA 2000 / Optic Fiber – Repeater – Extender bus line (High Performance)

ACCESSORIES:

- Order Code: **AC34011** - 35mm Rail DIN - Power Supply 220/240V AC 50/60Hz – 12 V DC
- Order Code: **AC34012** - 35mm Rail DIN - Power Supply 220/240V AC 50/60Hz – 24 V DC

DISCLAIMER:

All technical content within this document can be modified without notice. The content of the document is a under continual renewal. For losses due to fire, earthquake, third party access or other accidents, or intentional or accidental abuse, misuse, or use under abnormal conditions repairs are charged to the user. ADFweb.com S.r.l. will not be liable for accidental loss of use or inability to use this product, such as loss of business income. ADFweb.com S.r.l. shall not be liable for consequences of improper use.

OTHER REGULATIONS AND STANDARDS:**WEEE INFORMATION**

Disposal of old electrical and electronic equipment (as in the European Union and other European countries with separate collection systems).

■ This symbol on the product or on its packaging indicates that this product may not be treated as household rubbish. Instead, it should be taken to an applicable collection point for the recycling of electrical and electronic equipment. If the product is disposed correctly, you will help prevent potential negative environmental factors and impact of human health, which could otherwise be caused by inappropriate disposal. The recycling of materials will help to conserve natural resources. For more information about recycling this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

RESTRICTION OF HAZARDOUS SUBSTANCES DIRECTIVE

The device respects the 2002/95/EC Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (commonly referred to as Restriction of Hazardous Substances Directive or RoHS).

CE MARKING

The product conforms with the essential requirements of the applicable EC directives.

WARRANTIES AND TECHNICAL SUPPORT:

For fast and easy technical support for your ADFweb.com SRL products, consult our internet support at www.adfweb.com. Otherwise contact us at the address support@adfweb.com

RETURN POLICY:

If while using your product you have any problem and you wish to exchange or repair it, please do the following:

- Obtain a Product Return Number (PRN) from our internet support at www.adfweb.com. Together with the request, you need to provide detailed information about the problem.
- Send the product to the address provided with the PRN, having prepaid the shipping costs (shipment costs billed to us will not be accepted).

If the product is within the warranty of twelve months, it will be repaired or exchanged and returned within three weeks. If the product is no longer under warranty, you will receive a repair estimate.

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