User Manual

Revision 2.000
English

Fiber Optic - Bridge and Repeater

For DeviceNet

(Order Code: HD67180F – HD67180FS)

for Website information:
www.adfweb.com?Product=HD67180F

for Price information:
www.adfweb.com?Price=HD67180F

Benefits and Main Features:

- Designed for serious use
- Different baud rate of branches CAN
- Protocol independent, allowing it to work with all the different CAN protocols and frame lengths.
- Industrial temperature range:
  -30°C / 70°C (-22°F / 158°F)

Similiar Products

Benefits

For others Repeaters:

Optic Fibres Repeaters

See also the following links:

www.adfweb.com?Product=HD67117F	(For CANopen)
www.adfweb.com?Product=HD67117FS	(For CANopen)
www.adfweb.com?Product=HD67180FS	(For DeviceNet)
www.adfweb.com?Product=HD67181F	(For CAN 2.0A & 2.0B)
www.adfweb.com?Product=HD67181FS	(For CAN 2.0A & 2.0B)
www.adfweb.com?Product=HD67182F	(For J1939)
www.adfweb.com?Product=HD67182FS	(For J1939)
www.adfweb.com?Product=HD67221F	(Filtrate CAN)
www.adfweb.com?Product=HD67221FS	(Filtrate CAN)

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	(Filtrate 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

INDEX:

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.

With this "Document Code" go to web page www.adfweb.com/download/ and search for the corresponding code on the page. Click on the proper "Document Code" and download the updates.

To obtain the updated documentation for the product that you own, note the "Document Code" (Abbreviated written "Doc. Code" on the label on the product) and download the updated from our web site www.adfweb.com/download/

REVISION LIST:

Revision	Date	Author	Chapter	Description
1.000	28/03/2007	Av	All	First release version
1.001	22/06/2007	Av	All	Revision
1.002	26/06/2007	Av	All	Revision
2.000	09/10/2008	Fl	All	New document format

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INTRODUCTION:

The "HD67xxxF" and "HD67xxxFS" series are CAN Bus devices designed to extend high CAN bus signals onto 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 fibre up to 2000 meters;
- MAX baud rate 1Mb;
- Allows extension of a line segment (without lowering the Baud Rate);
- Extension of nodes number;
- Different baud rate setting;
- Data Filter (HD67221F, HD67221FS);
- CAN Protocol independent;
- Microprocessor 16bit;
- 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 10k up to 1Mbs;
- Possible different baud rate setting (into different branches);
- Power: 24VDC 200mA or 12/18V AC 50/60Hz 300mA;
- Temperature range -30°C to 70°C;
- Mountable on Rail Din;
- Dimensions 120x23x107 (D x W x H);
- Weight 200g.

FUNCTION SCHEME:

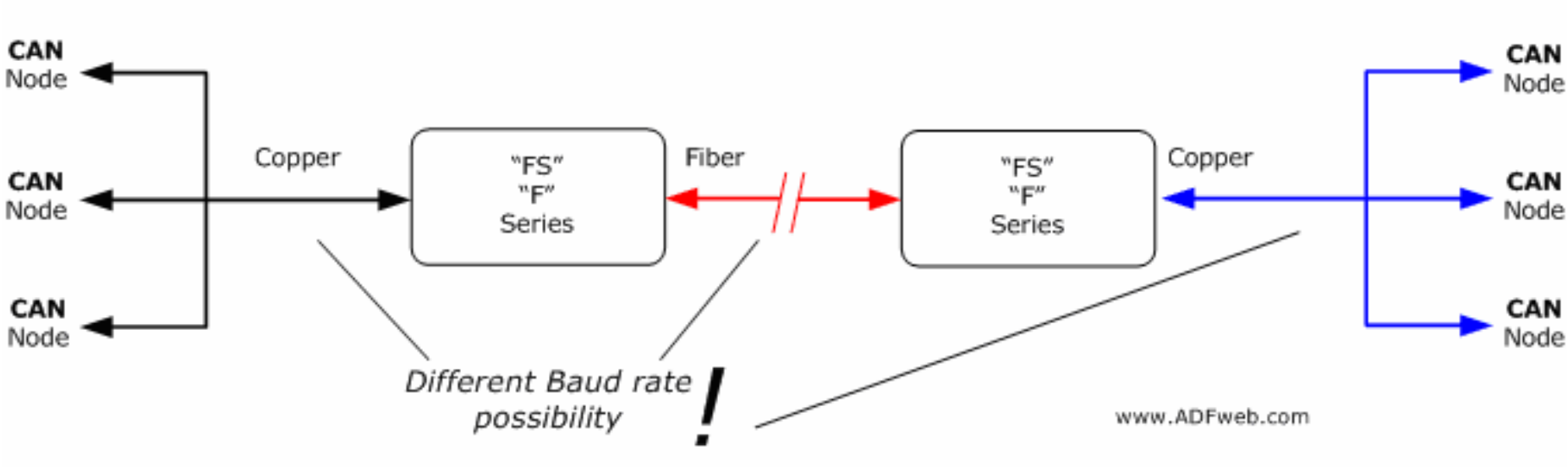


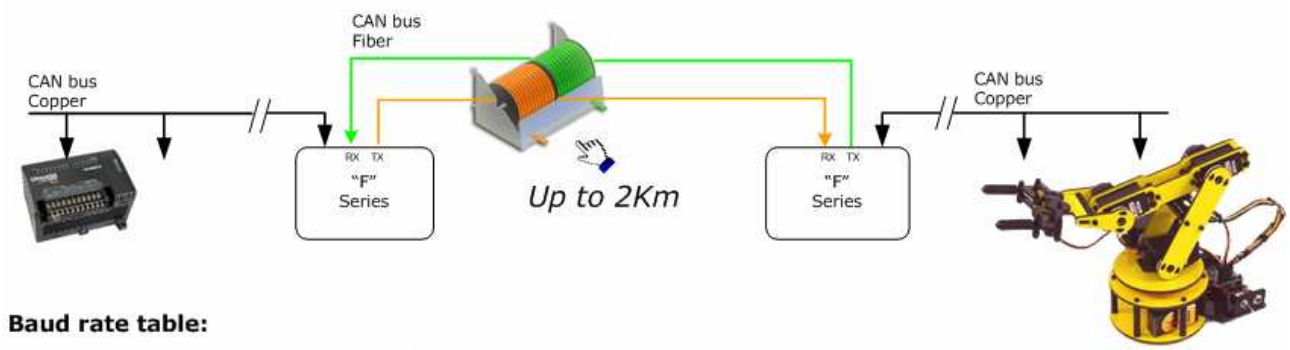
Figure 1: Functional scheme

"F" SERIES

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

HD67117F CANopen to Fiber Optic Repeater;
HD67180F DeviceNet to Fiber Optic Repeater;
HD67181F CAN to Fiber Optic Repeater for generic use (Standard and Extended Protocol);
HD67182F J1939 to Fiber Optic Repeater.

Function scheme:



Baud rate table:

Copper Side:

Baud rate [bps]	Lenght 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 Oprtic Side:

Baud rate [bps]	Lenght max [m]
10 K	2000
20 K	2000
50 K	1000 (*)
100 K	650 (*)
125 K	500 (*)
250 K	250 (*)
500 K	100 (*)
800 K	50 (*)
1000 K	25 (*)

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(*) Link distance is limited by signaling rate as specified by the CAN bus specification to bus arbitration.

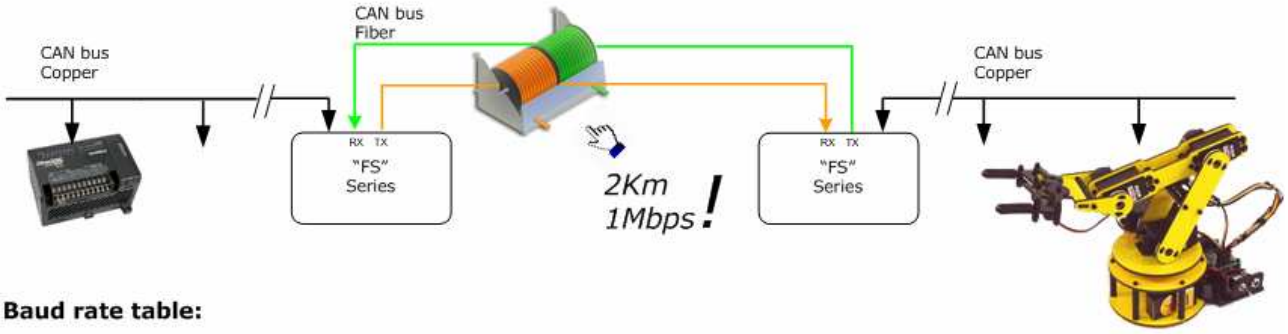
Figure 2: Function scheme and Baud rate table for "F" series

"FS" SERIES

Bridges and repeaters for CANbus, CANopen, DeviceNET, J1939, CAN2.0A, CAN2.0B.
This series of device use the large bandwidth of optics fibres for extend the CAN bus link.

HD67117FS CANopen to Fiber Optic Repeater;
HD67180FS DeviceNet to Fiber Optic Repeater;
HD67181FS CAN to Fiber Optic Repeater for generic use (Standard and Extended Protocol);
HD67182FS J1939 to Fiber Optic Repeater.

Function scheme:



Baud rate table:

Copper Side:

Baud rate [bps]	Lenght 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]	Lenght 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

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(*) Fiber optic 62.5/125µm

Figure 3: Function scheme and Baud rate table for "FS" series

SET SWITCH BAUD RATE FOR "F" SERIES:

The switches for setting the CAN0 baud rate and CAN1 on the front panel of the device.

Dip n° 1, 2, 3, 4 CAN1 setting
Dip n° 5, 6, 7, 8 CAN0 setting

Speed CAN1 BPS	Dip 1	Dip 2	Dip 3	Dip 4
Speed CAN0 BPS	Dip 5	Dip 6	Dip 7	Dip 8
10K	ON	OFF	OFF	OFF
20K	OFF	ON	OFF	OFF
50K	ON	ON	OFF	OFF
62.5K	OFF	ON	OFF	ON
100K	OFF	OFF	ON	OFF
125K	ON	OFF	ON	OFF
250K	OFF	ON	ON	OFF
500K	ON	ON	ON	OFF
800K	OFF	OFF	OFF	ON
1000K	ON	OFF	OFF	ON

SET SWITCH BAUD RATE FOR "FS" SERIES:

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

Dip n° 5, 6, 7, 8 CAN0 setting

Speed CAN0 BPS	Dip 5	Dip 6	Dip 7	Dip 8
10K	ON	OFF	OFF	OFF
20K	OFF	ON	OFF	OFF
50K	ON	ON	OFF	OFF
62.5K	OFF	ON	OFF	ON
100K	OFF	OFF	ON	OFF
125K	ON	OFF	ON	OFF
250K	OFF	ON	ON	OFF
500K	ON	ON	ON	OFF
800K	OFF	OFF	OFF	ON
1000K	ON	OFF	OFF	ON

CONNECTION SCHEME:

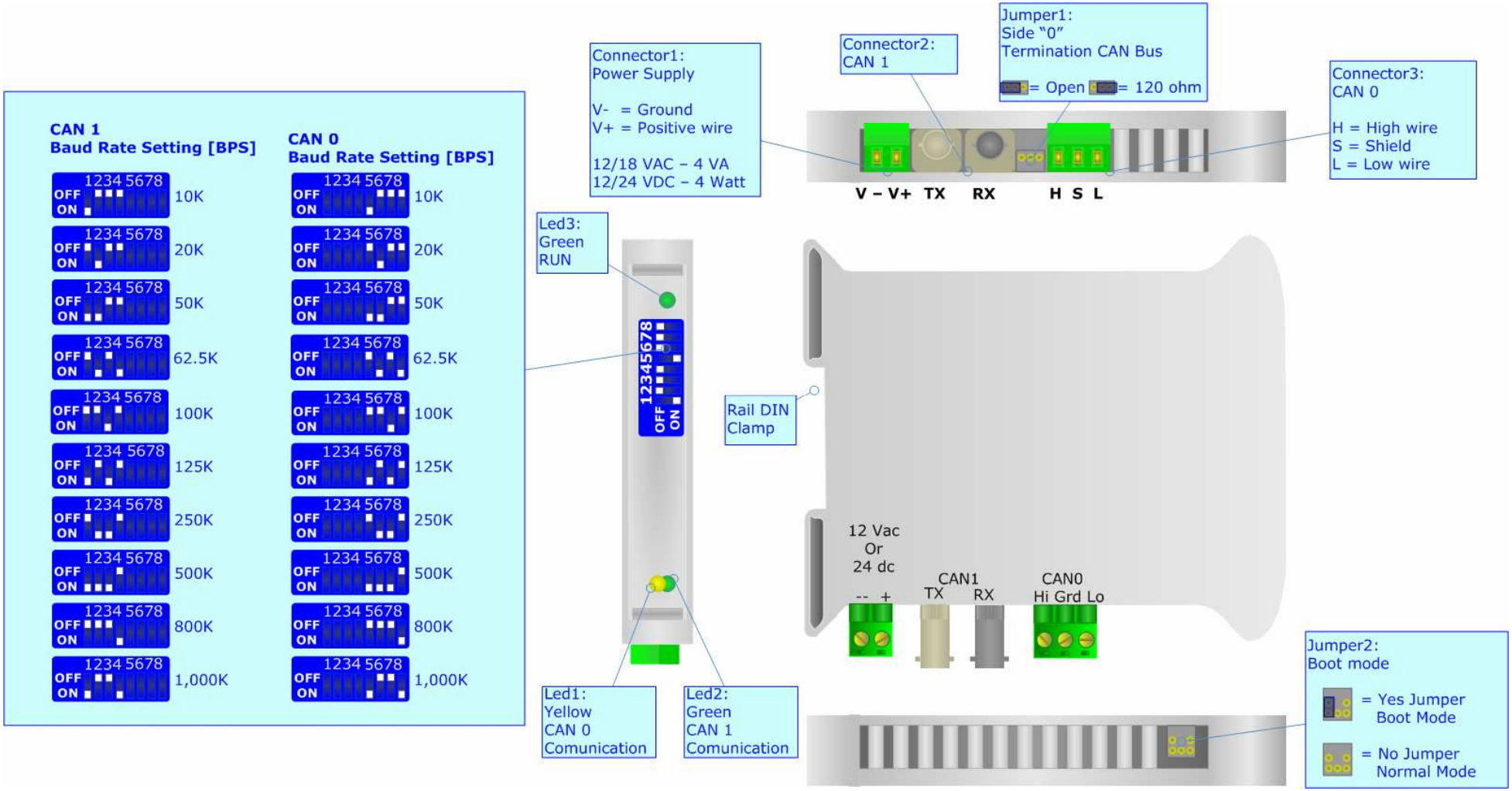

Figure 4: Connection scheme for HD67180F

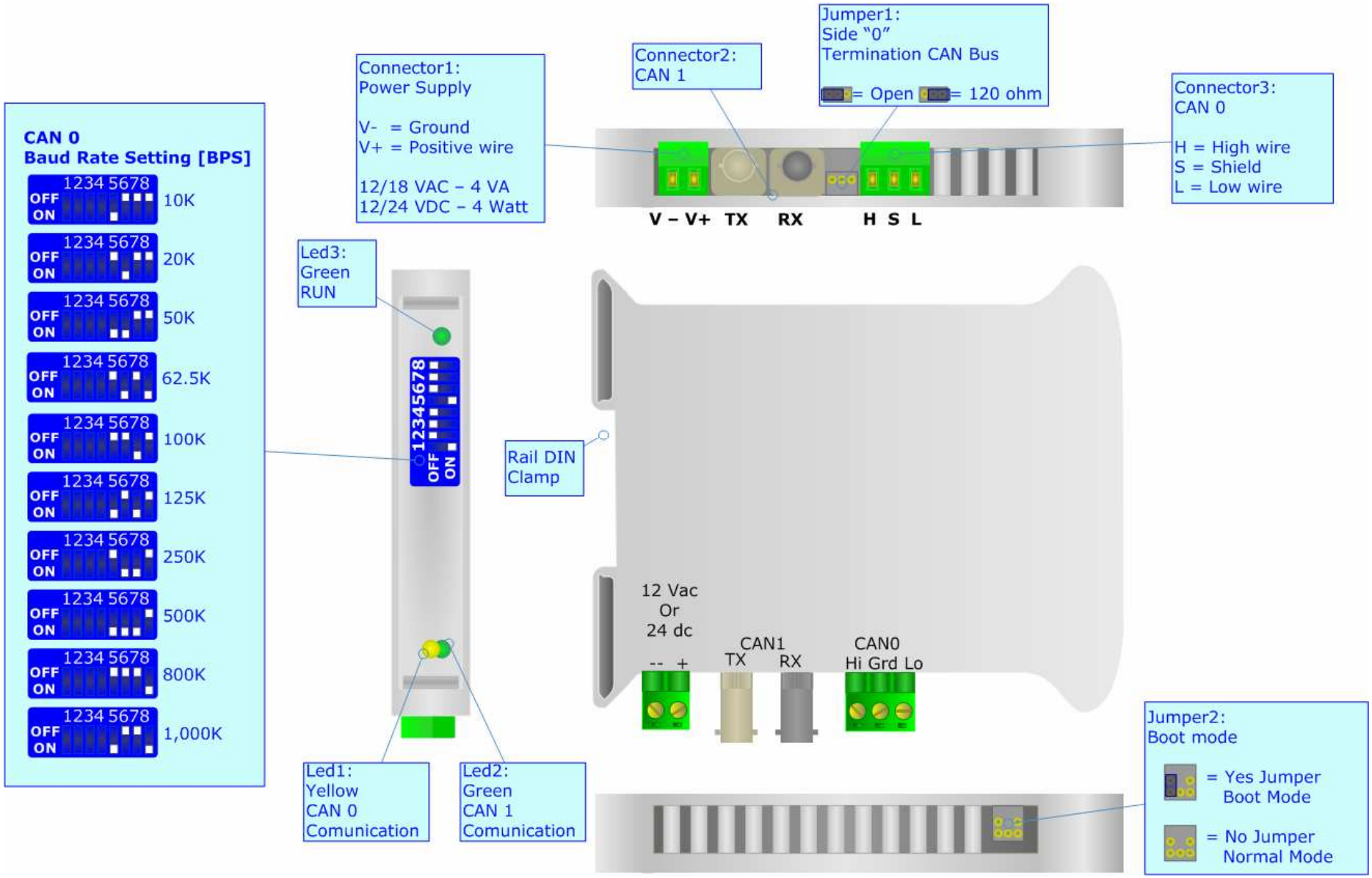

Figure 5: Connection scheme for HD67180FS

CAN BUS CABLE CHARACTERISTICS:

DC parameter:		Impedance	70 ohm/m
AC parameters:		Impedance	120 ohm/m
		Delay	5 ns/m
Fiber optic:		Dimensions	62.5/125µm

MECHANICAL DIMENSIONS:

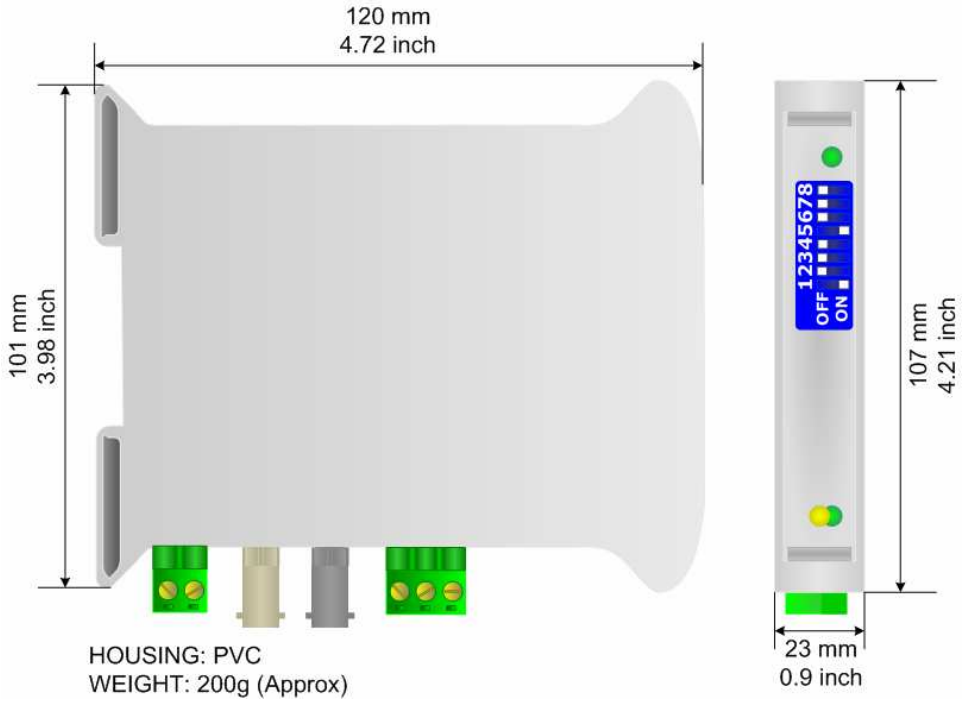

Figure 6: Mechanical Dimensions Scheme for HD67180F – HD67180FS

ORDER CODE: (*)

HD67117F - CANopen to Optic Fibres Repeater
HD67117FS

HD67180F - DeviceNet to Optic Fibres Repeater
HD67180FS

HD67181F - CAN to Optic Fibres Repeater for generic use (Standard and Extended Protocol)
HD67181FS

HD67182F - J1939 to Optic Fibres Repeater
HD67182FS

(*) Regarding "F" and "FS" series difference, see the above "Baud Rate Table" (Fig. 2 and Fig. 3).

ACCESSORIES:

AC34001 - Power Supply 220/12V 50/60Hz

AC34002 - Power Supply 110/12V 50/60Hz

AC34021 - Patch Cable Optic Fibres ST/ST 2Mts

AC34022 - Patch Cable Optic Fibres ST/ST 10Mts

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:

1) 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.
2) 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.

PRODUCTS AND RELATED DOCUMENTS:

Part	Description	URL
HD67117	CANopen Repeater	www.adfweb.com?Product=HD67117
HD67180	DeviceNet Repeater	www.adfweb.com?Product=HD67180
HD67181	CAN Repeater for generic use (Standard and Extended Protocol)	www.adfweb.com?Product=HD67181
HD67182	J1939 Repeater	www.adfweb.com?Product=HD67182
HD67221	Gateway/Bridge Filtrate CAN / CAN	www.adfweb.com?Product=HD67221