

User Manual

Revision 1.100

English

M-Bus Slave / Serial - Converter

(Order Code: HD67018-B2)

For Website information:

www.adfweb.com?Product=HD67018

For Price information:

www.adfweb.com?Price=HD67018-B2

Benefits and Main Features:

- ⚙ Very easy to configure
- ⚙ Temperature range: -40°C/+85°C (-40°F/+185°F)



For others M-Bus products see also the following link:

Converter M-Bus Master to

- www.adfweb.com?Product=HD67021 (RS232)
- www.adfweb.com?Product=HD67022 (RS485)
- www.adfweb.com?Product=HD67024 (USB)
- www.adfweb.com?Product=HD67030 (Ethernet)

M-Bus Analyzer - Scanner - Sniffer

www.adfweb.com?Product=HD67031

M-Bus - Repeater - Isolator

www.adfweb.com?Product=HD67032M

Converter - M-Bus Master /

- www.adfweb.com?Product=HD67029M-485 (Modbus Slave)
- www.adfweb.com?Product=HD67044 (Modbus TCP Slave)
- www.adfweb.com?Product=HD67051-B2 (CANopen)
- www.adfweb.com?Product=HD67053M (PROFIBUS)
- www.adfweb.com?Product=HD67056-B2 (BACnet Slave)
- www.adfweb.com?Product=HD67058M (DeviceNet Slave)
- www.adfweb.com?Product=HD67077-B2 (EtherNet/IP Slave)
- www.adfweb.com?Product=HD67078-B2 (PROFINET)

M-Bus - Concentrator - Datalogger

www.adfweb.com?Product=HD67054M

M-Bus Slave / Modbus Master - Converter

www.adfweb.com?Product=HD67059M-232

Do you have an your customer protocol?

www.adfweb.com?Product=HD67003

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

www.adfweb.com?Cmd=helpme



User Manual

INDEX:

	Page
INDEX	2
UPDATED DOCUMENTATION	2
REVISION LIST	2
WARNING	2
TRADEMARKS	2
SECURITY ALERT	3
EXAMPLE OF CONNECTION	4
CONNECTION SCHEME	5
CHARACTERISTICS	6
CONFIGURATION	6
POWER SUPPLY	7
FUNCTION MODES	8
LEDS	9
RS485	10
M-BUS	11
ETHERNET	11
USE OF COMPOSITOR SW67018	12
NEW CONFIGURATION / OPEN CONFIGURATION	13
SOFTWARE OPTIONS	14
SET COMMUNICATION	15
UPDATE DEVICE (HARDWARE WITHOUT ETHERNET PORT)	16
UPDATE DEVICE (HARDWARE WITH ETHERNET PORT)	17
MECHANICAL DIMENSIONS	19
ORDERING INFORMATIONS	20
ACCESSORIES	20
DISCLAIMER	21
OTHER REGULATIONS AND STANDARDS	21
WARRANTIES AND TECHNICAL SUPPORT	22
RETURN POLICY	22

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.

REVISION LIST:

Revision	Date	Author	Chapter	Description
1.000	28/04/2014	Fl	All	First Release
1.100	02/05/2018	Ff	All	New hardware version

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:

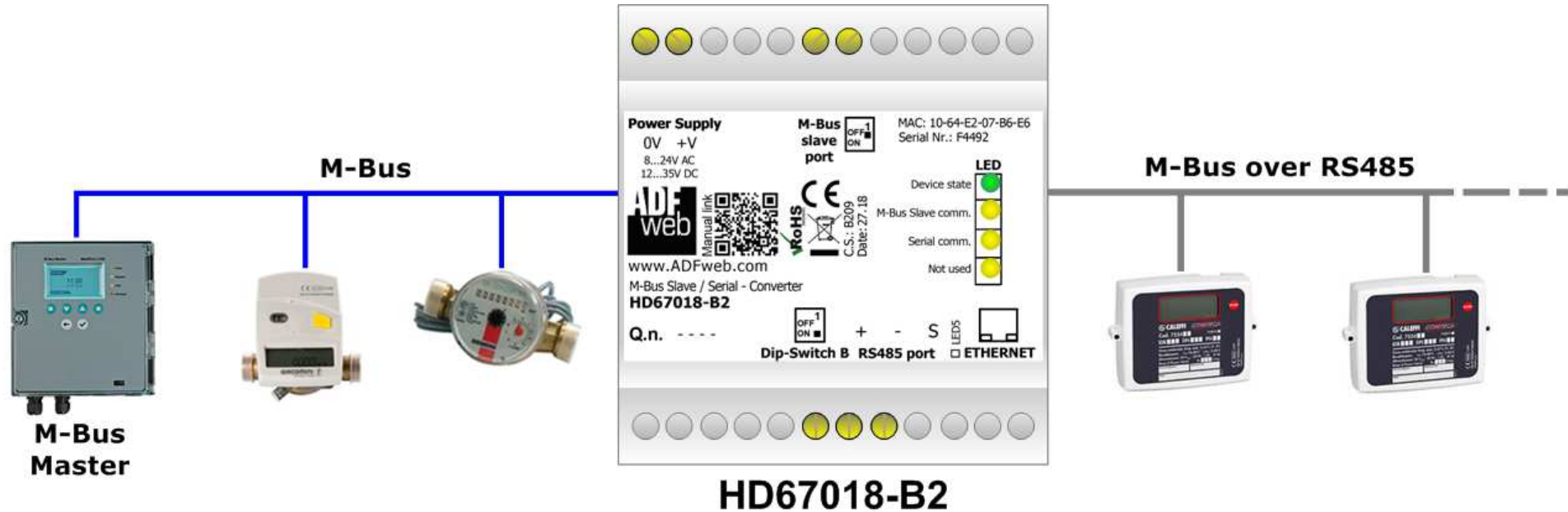


This symbol indicates that non-observance of the safety instructions is a danger for people that could lead to serious injury or death and / or the possibility of damage.

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.

EXAMPLE OF CONNECTION:



CONNECTION SCHEME:

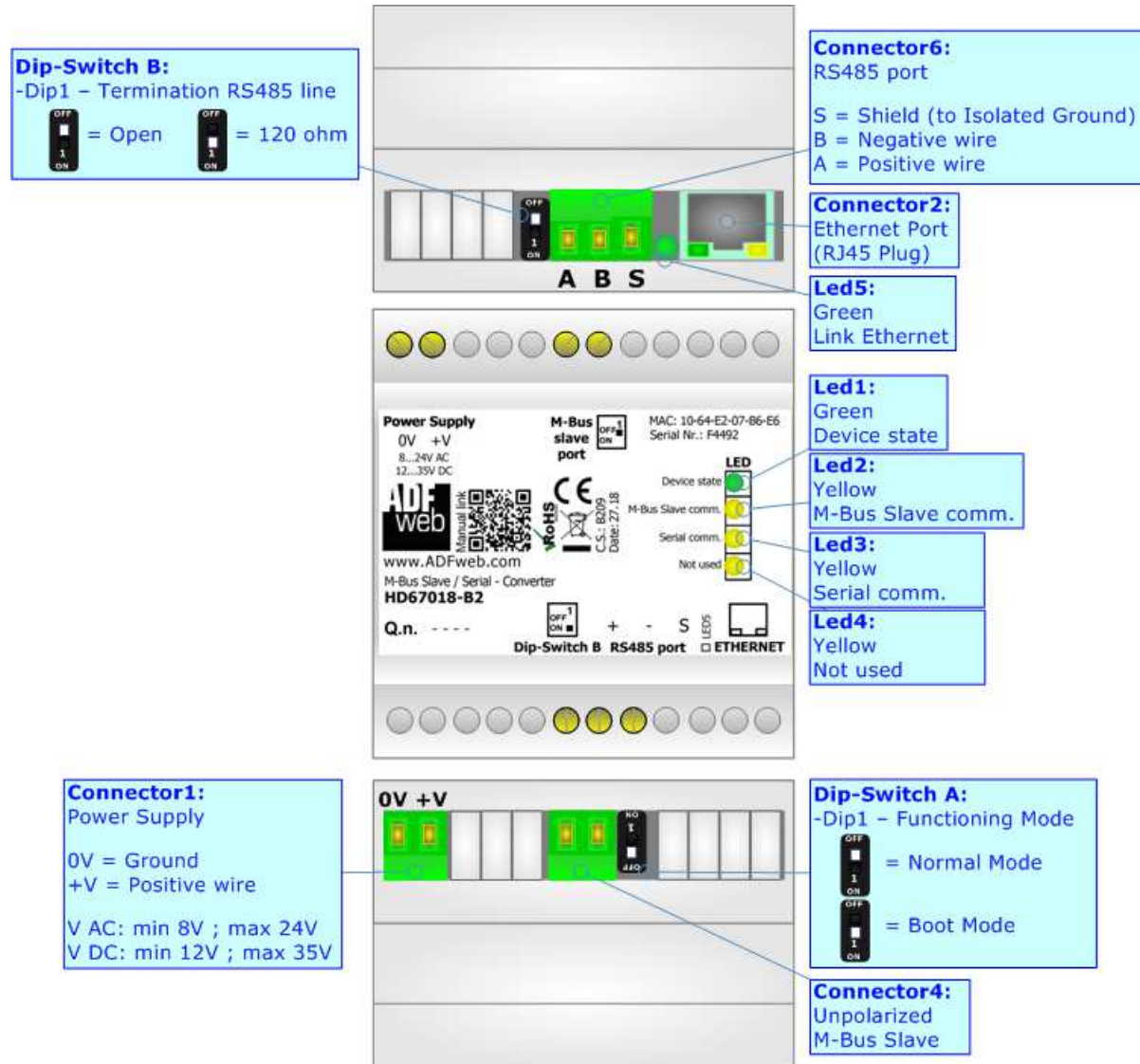


Figure 1: Connection scheme for HD67018-B2

CHARACTERISTICS:

The HD67018-B2 is a M-Bus Slave / Serial - Converter. It allows to insert RS485 devices that uses M-Bus protocol into a M-Bus physics network.

It allows for the following characteristics:

- Two-directional information between M-Bus bus and Serial RS485 bus;
- Mountable on 35mm Rail DIN;
- Wide power supply input range: 8...21V AC or 8...35V DC;
- Wide temperature range: -40°C / 85°C [-40°F / +185°F].

CONFIGURATION:

You need Compositor SW67018 software on your PC in order to perform the following:

- Define the parameters of M-Bus line;
- Define the parameters of serial line;
- Update the device.

POWER SUPPLY:

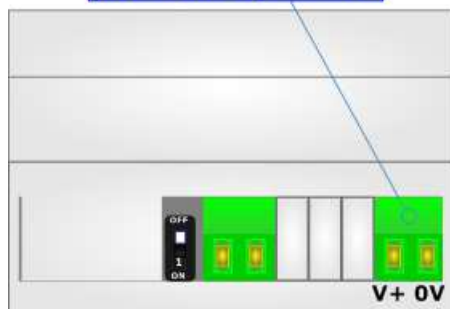
The devices can be powered at 8...19V AC and 8...35V DC. For more details see the two tables below.

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

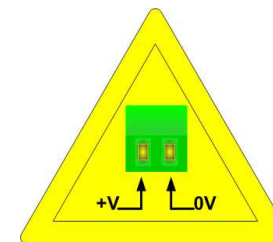
Consumption at 24V DC:

Device	Consumption [W/VA]
HD67018-B2	4

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



Caution: Do not reverse the polarity power



HD67018-B2

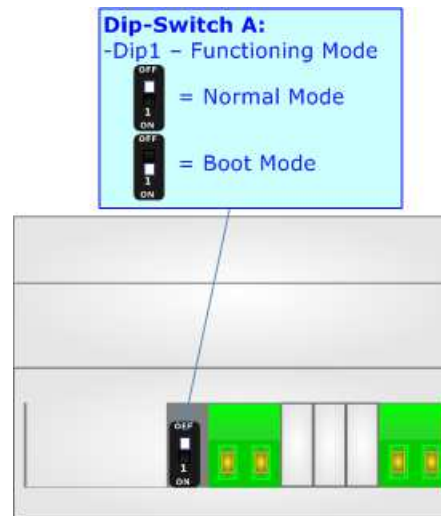
FUNCTION MODES:

The device has got two functions mode depending of the position of Dip1 of 'Dip-Switch A' of HD67018-B2:

- The first, with Dip1 of 'Dip-Switch A' at OFF position, is used for the normal working of the device.
- The second, with Dip1 of 'Dip-Switch A' at ON position, is used for uploading the Project and/or Firmware.

For the operations to follow for the updating, see 'UPDATE DEVICE' section.

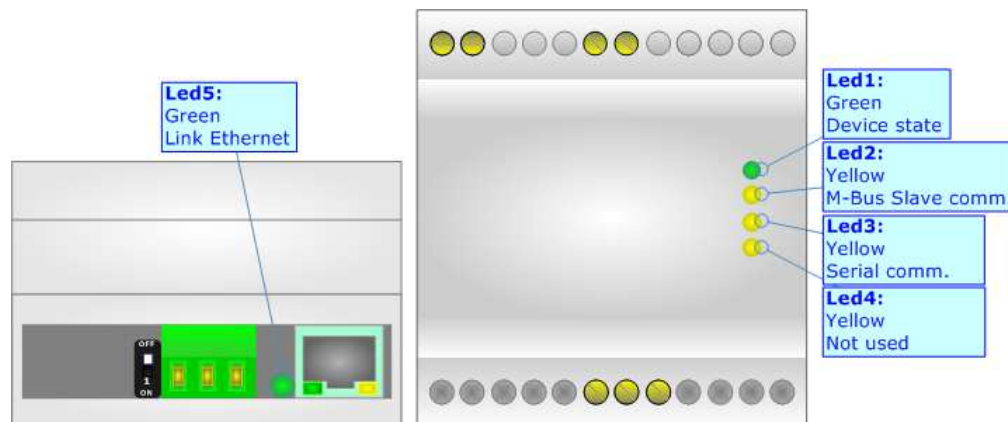
According to the functioning mode, the LEDs will have specifics functions, see 'LEDS' section.



LEDS:

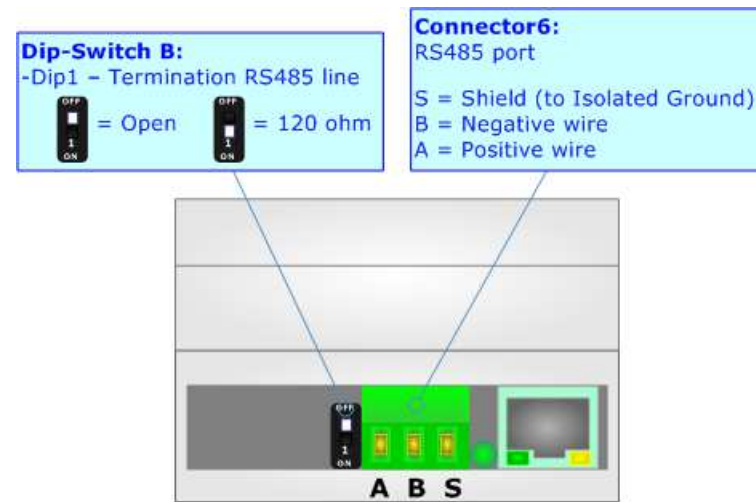
The device has got five LEDs that are used to give information of the functioning status.
The various meanings of the LEDs are described in the table below.

LED	Normal Mode	Boot Mode
1: Device state (green)	Blinks slowly (~1Hz)	Blinks quickly: Boot state Blinks very slowly (~0.5Hz): update in progress
2: M-Bus slave comm. (yellow)	Blinks when a M-Bus request is received	Blinks quickly: Boot state Blinks very slowly (~0.5Hz): update in progress
3: Serial comm. (yellow)	Blinks when a serial response is received	Blinks quickly: Boot state Blinks very slowly (~0.5Hz): update in progress
4: Not used	OFF	Blinks quickly: Boot state Blinks very slowly (~0.5Hz): update in progress
5: Ethernet Link (green)	ON: Ethernet cable connected OFF: Ethernet cable disconnected	ON: Ethernet cable connected OFF: Ethernet cable disconnected



RS485:

To terminate the RS485 line with a 120Ω resistor, it is necessary to put dip 1 ON, like in figure.



The maximum length of the cable should be 1200m (4000 feet).

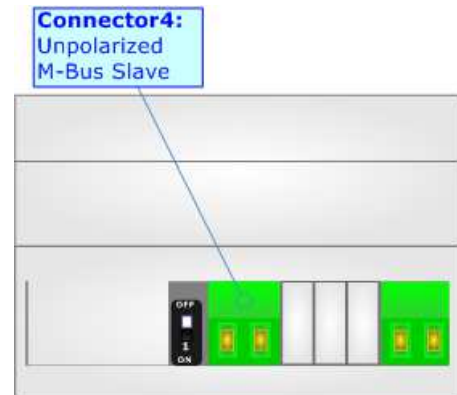
Here some codes of cables:

- Belden: p/n 8132 - 2x 28AWG stranded twisted pairs conductor + foil shield + braid shield;
- Belden p/n 82842 - 2x 24AWG stranded twisted pairs conductor + foil shield + braid shield;
- Tasker: p/n C521 - 1x 24AWG twisted pair conductor + foil shield + braid shield;
- Tasker: p/n C522 - 2x 24AWG twisted pairs conductor + foil shield + braid shield.

M-BUS:

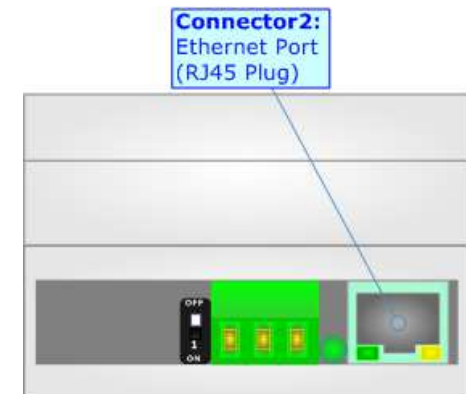
The M-Bus is a unpolarized bus.

A two wire standard telephone cable (JYStY N*2*0.8 mm) is used as the transmission medium for the M-Bus.



ETHERNET:

The Ethernet connection must be made using Connector2 with at least a Category 5E cable. The maximum length of the cable should not exceed 100m. The cable has to conform to the T568 norms relative to connections in cat.5 up to 100 Mbps. To connect the device to an Hub/Switch is recommended the use of a straight cable, to connect the device to a PC/PLC/other is recommended the use of a cross cable.



USE OF COMPOSITOR SW67018:

To configure the Converter, use the available software that runs with Windows called SW67018. It is downloadable on the site www.adfweb.com and its operation is described in this document. *(This manual is referenced to the last version of the software present on our web site).* The software works with MSWindows (XP, Vista, Seven, 8; 32/64bit).

When launching the SW67018, the window below appears (Fig. 2).

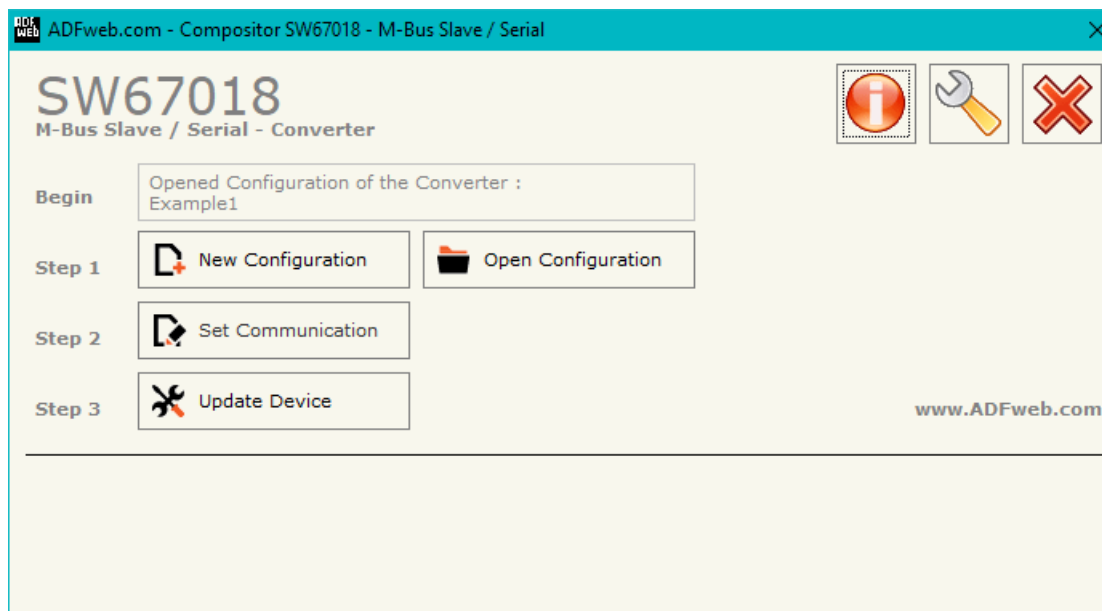
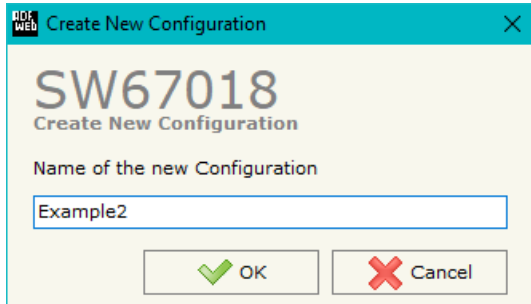


Figure 2: Main window for SW67018

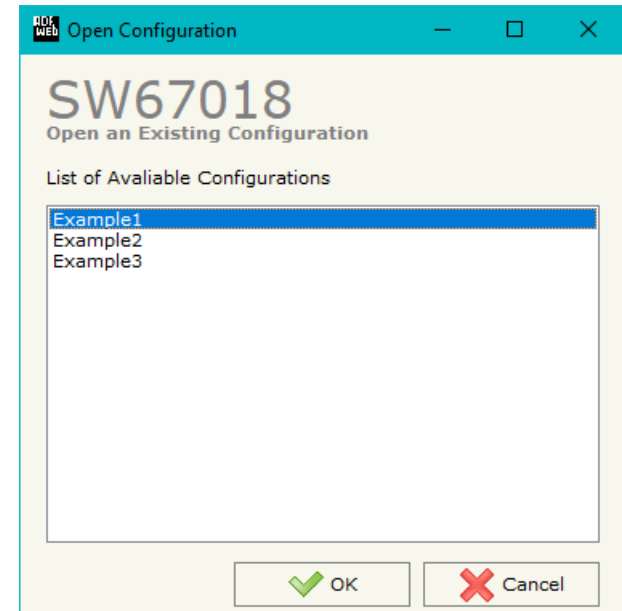
NEW CONFIGURATION / OPEN CONFIGURATION:

The “**New Configuration**” button creates the folder which contains the entire device’s configuration.




A device’s configuration can also be imported or exported:

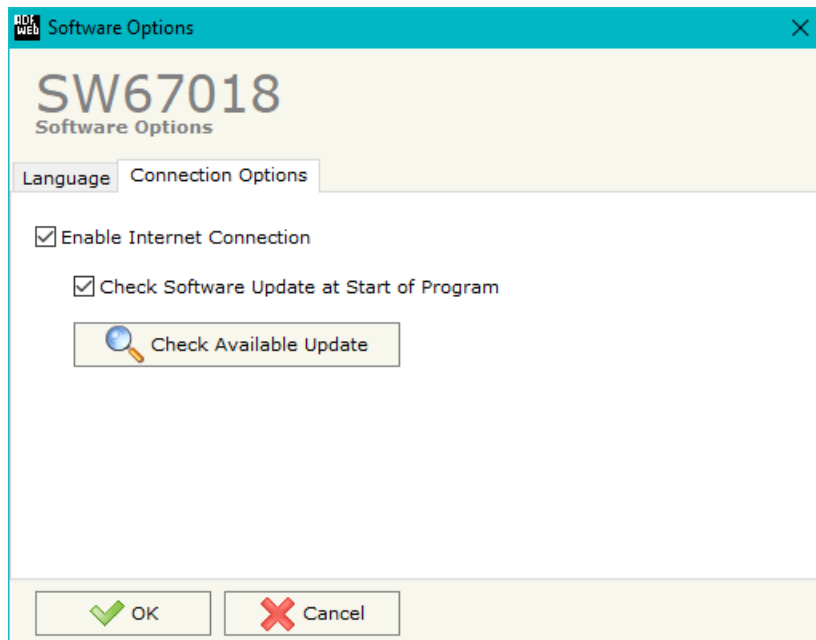
- To clone the configurations of a programmable “M-Bus Slave / Serial - Converter” in order to configure another device in the same manner, it is necessary to maintain the folder and all its contents;
- To clone a project in order to obtain a different version of the project, it is sufficient to duplicate the project folder with another name and open the new folder with the button “**Open Configuration**”.



SOFTWARE OPTIONS:

By pressing the “**Settings**” () button there is the possibility to change the language of the software and check the updatings for the compositor.

In the section “Language” it is possible to change the language of the software.



In the section “Connection Options”, it is possible to check if there are some updatings of the software compositor in ADFweb.com website. Checking the option “**Check Software Update at Start of Program**”, the SW67018 check automatically if there are updatings when it is launched.

SET COMMUNICATION:

This section define the fundamental communication parameters of two buses, M-Bus and Serial.

By Pressing the **"Set Communication"** button from the main window for SW67018 (Fig. 2) the window "Set Communication" appears (Fig. 3).

In the section "Hardware Type" it is possible to define the hardware used:

- Device without Ethernet;
- Device with Ethernet.

The means of the fields for the "Serial" section are:

- In the field **"Baudrate"** the baudrate for the serial line is defined;
- In the field **"Parity"** the parity of the serial line is defined.

The means of the fields for the "M-Bus Slave" section are:

- In the field **"Baudrate"** the baudrate for the M-Bus line is defined;
- In the field **"Parity"** the parity of the M-Bus line is defined.

The means of the fields for the "Ethernet" section are (only for HD67021/22-B2):

- In the fields **"IP ADDRESS"** the IP address to assign to the converter is defined;
- In the fields **"SUBNET Mask"** the SubNet Mask is defined;
- In the fields **"GATEWAY"** the default gateway of the network is defined. This feature can be enabled or disabled pressing the Check Box field. This feature is used for going out of the net.

These informations are used for programming the converter (for hardware version with Ethernet port).

The screenshot shows a software window titled "Set Communication" for device "SW67018". The window is divided into several sections for configuring communication parameters:

- Select Device:** A dropdown menu currently set to "Device with Ethernet".
- Serial:** Baudrate is set to 2400 and Parity is set to EVEN.
- M-Bus Slave:** Baudrate is set to 2400 and Parity is set to EVEN.
- Ethernet:** IP ADDRESS is 192.168.0.10, SUBNET Mask is 255.255.255.0, and GATEWAY is 192.168.0.1 (with the GATEWAY checkbox unchecked).

At the bottom of the window are "OK" and "Cancel" buttons.

Figure 3: "Set Communication" window

UPDATE DEVICE (HARDWARE WITHOUT ETHERNET PORT):

By pressing the **“Update Device”** button it is possible to load the created Configuration into the device, and also the Firmware if is necessary, using the RS232 port.

In order to load the parameters or update the firmware in the device, follow these instructions:

- Turn OFF the Device;
- Connect the RS232 cable from your PC to the Converter;
- Insert the Boot Jumper;
- Select the **“COM port”** and press the **“Connect”** button;
- Turn ON the device;
- Check the **“Boot state”** Led. It must blink quickly;
- Select which operations you want to do.
- Press the **“Execute update firmware”** button to start the upload;
- When all the operations are **“OK”** turn OFF the device;
- Remove the Boot Jumper;
- Disconnect the USB/RS232 cable;
- Turn ON the device.

At this point the configuration/firmware on the device is correctly updated.

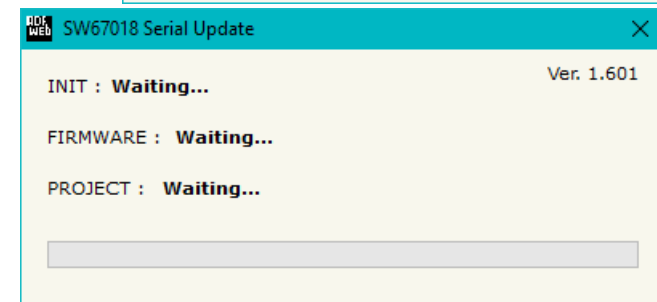
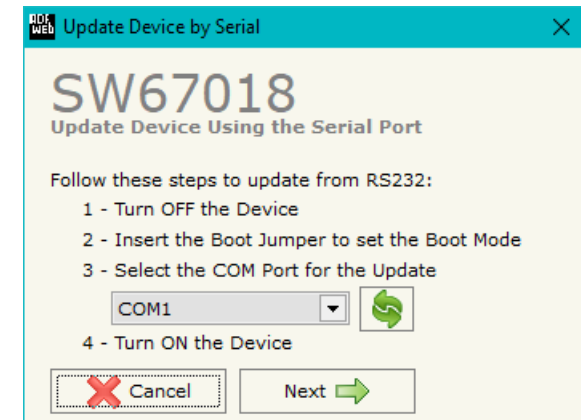


Figure 4: “Update Device” windows

UPDATE DEVICE (HARDWARE WITH ETHERNET PORT):

By pressing the **“Update Device”** button, it is possible to load the created Configuration into the device; and also the Firmware, if necessary. This by using the Ethernet port.

If you don't know the actual IP address of the device you have to use this procedure:

- Turn OFF the Device;
- Put Dip1 of `Dip-Switch A` in ON position;
- Turn ON the device
- Connect the Ethernet cable;
- Insert the IP **“192.168.2.205”**;
- Select which operations you want to do;
- Press the **“Execute update firmware”** button to start the upload;
- When all the operations are “OK” turn OFF the Device;
- Put Dip1 of `Dip-Switch A` in OFF position;
- Turn ON the device.

If you know the actual IP address of the device, you have to use this procedure:

- Turn ON the Device with the Ethernet cable inserted;
- Insert the actual IP of the Converter;
- Select which operations you want to do;
- Press the **“Execute update firmware”** button to start the upload;
- When all the operations are “OK” the device automatically goes at Normal Mode.

At this point the configuration/firmware on the device is correctly updated.

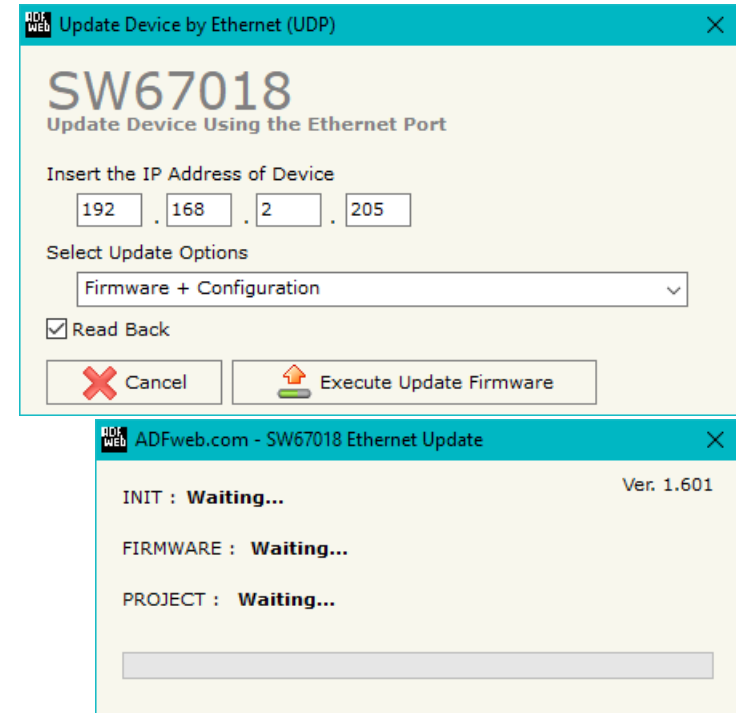


Figure 5: “Update device” windows



Note:

When you receive the device, for the first time, you also have to update the Firmware in the HD67018 device.



Warning:

If Fig. 6 appears when you try to do the Update try these points before seeking assistance:

- Check if the serial COM port selected is the correct one;
- Check if the serial cable is connected between the PC and the device;
- Try to repeat the operations for the updating;
- Try with another PC;
- Try to restart the PC;
- Check the LAN settings;
- If you are using the program inside a Virtual Machine, try to use in the main Operating System;
- If you are using Windows Seven, Vista, 8 or 10 make sure that you have the administrator privileges;
- In case you have to program more than one device, using the "UDP Update", you have to cancel the ARP table every time you connect a new device on Ethernet. For do this you have to launch the "Command Prompt" and write the command "arp -d". Pay attention that with Windows Vista, Seven, 8, 10 you have to launch the "Command Prompt" with Administrator Rights;
- Pay attention at Firewall lock.

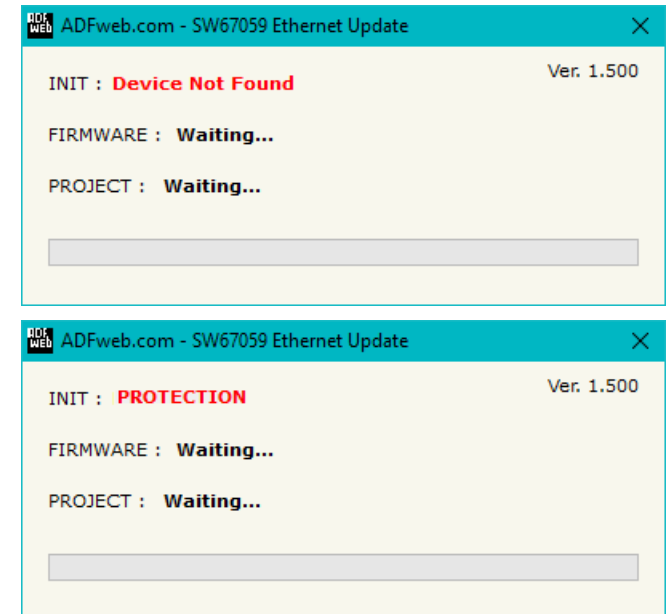


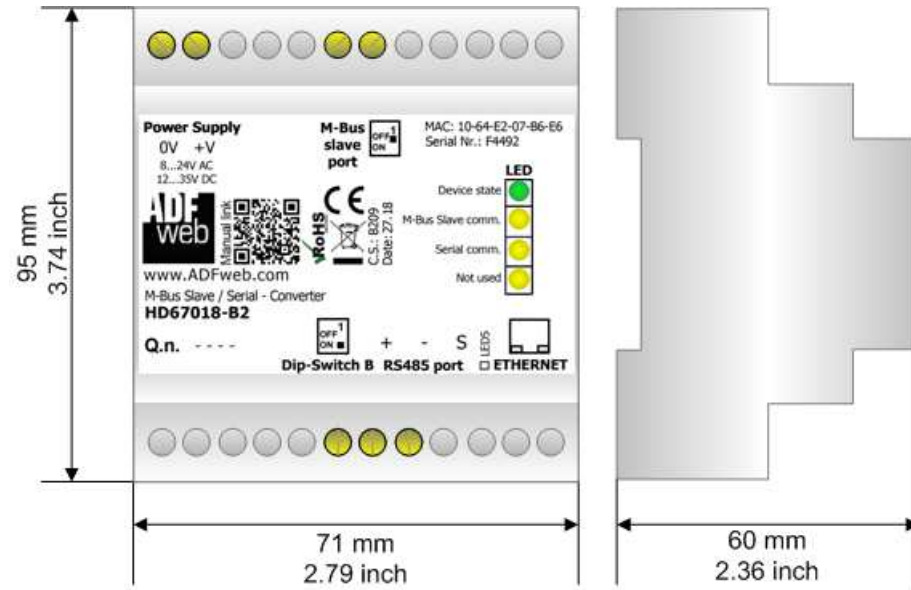
Figure 6: "Error" window



Warning:

In the case of HD67018 you have to use the software "SW67018": www.adfweb.com/download/filefold/SW67018.zip.

MECHANICAL DIMENSIONS:



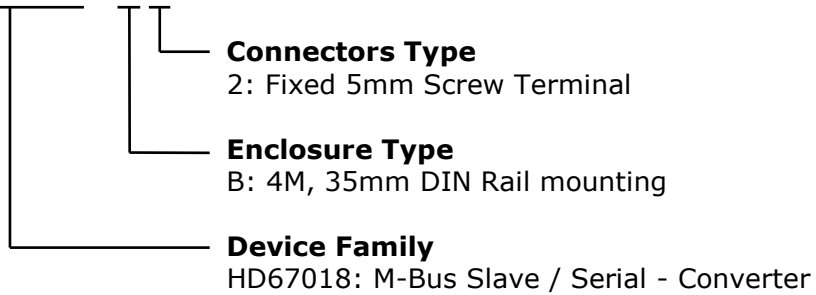
Housing: PVC
Weight: 200g (Approx)

Figure 7: Mechanical dimensions scheme for HD67018-B2

ORDERING INFORMATIONS:

The ordering part number is formed by a valid combination of the following:

HD67018 - B 2



Order Code: **HD67018-B2** - M-Bus Slave / Serial - Converter

ACCESSORIES:

Order Code: **AC34001** - 35mm Rail DIN - Power Supply 220/240V AC 50/60Hz - 12 V AC

Order Code: **AC34002** - 35mm Rail DIN - Power Supply 110V AC 50/60Hz - 12 V AC

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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