ADFweb

Industrial Electronic Devices

User Manual
Revision 1.000
English

BACnet/IP Master / CAN - Converter
(Order Code: HD67717-IP-A1)

BACnet MS/TP Master / CAN - Converter
(Order Code: HD67717-MSTP-A1, HD67717-MSTP-B2)

BACnet PTP Master / CAN - Converter
(Order Code: HD67717-PTP-A1, HD67717-PTP-B2)

For Website information:
  www.adfweb.com?Product=HD67717

For Price information:
  www.adfweb.com?Price=HD67717-A1

Benefits and Main Features:

⬧ Very easy to configure

⬧ Triple electrical isolation

⬧ Temperature range: -40°C/85°C (-40°F/185°F)

User Manual

For others BACnet Master products see also the following link:

Converter BACnet Master to

www.adfweb.com?Product=HD67712	**(Modbus Slave)**
www.adfweb.com?Product=HD67714	**(Modbus TCP Slave)**
www.adfweb.com?Product=HD67716	**(PROFIBUS Slave)**
www.adfweb.com?Product=HD67718	**(CANopen)**
www.adfweb.com?Product=HD67719	**(PROFINET)**
www.adfweb.com?Product=HD67721	**(DeviceNet Slave)**
www.adfweb.com?Product=HD67723	**(NMEA 2000)**
www.adfweb.com?Product=HD67725	**(J1939)**
www.adfweb.com?Product=HD67726	**(SNMP)**

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

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Industrial Electronic Devices

INDEX:

UPDATED DOCUMENTATION:

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+ Updated
+ Related to the product you own

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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	15/02/2013	Ff	All	First Release

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Industrial Electronic Devices

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:

HD67717-A1

![ADFweb logo] Industrial Electronic Devices
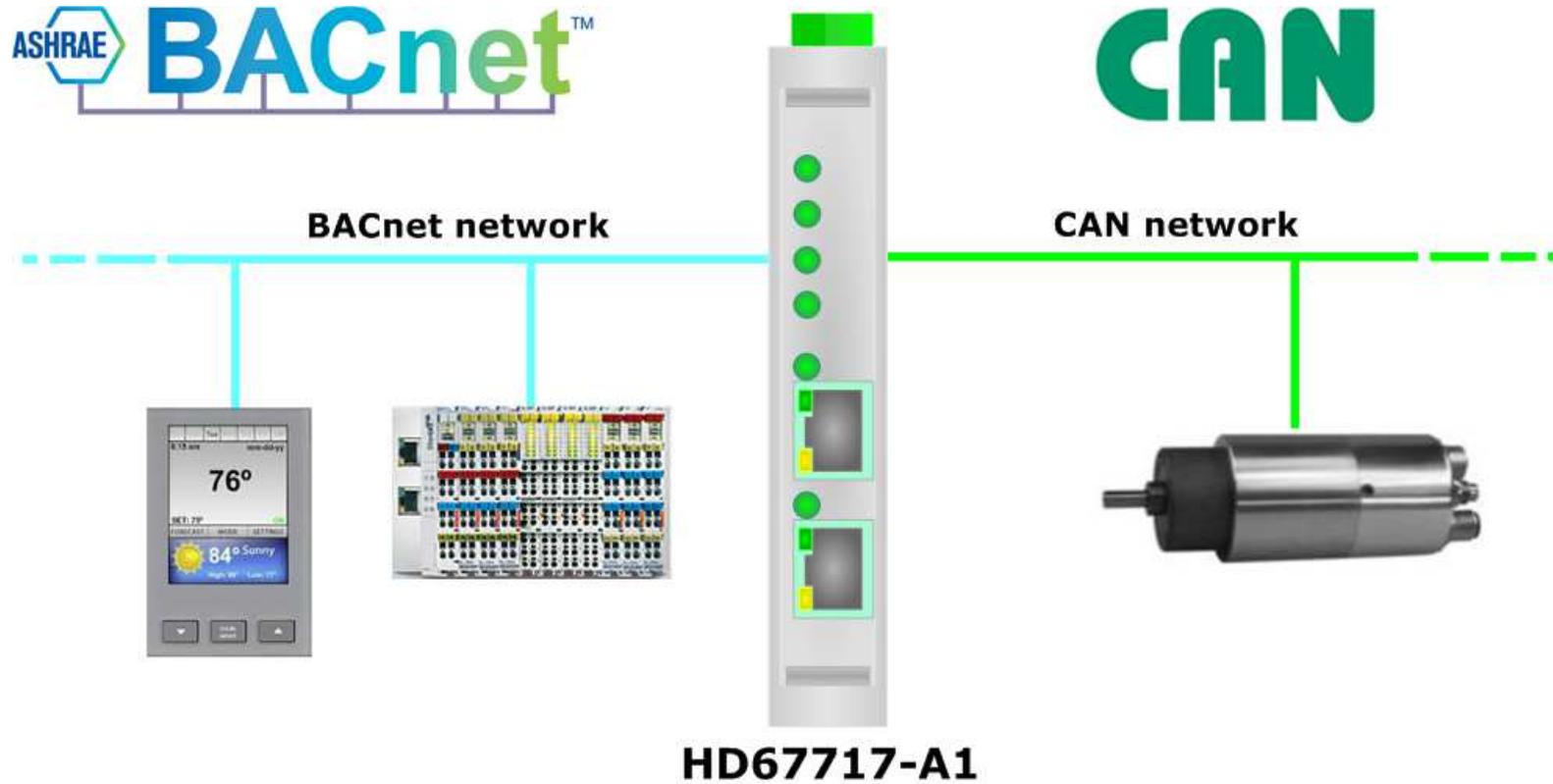
CONNECTION SCHEME:

Dip-Switch A:
-Dip1 – Must be at ON
-Dip2 – Functioning Mode

= Normal   = Boot
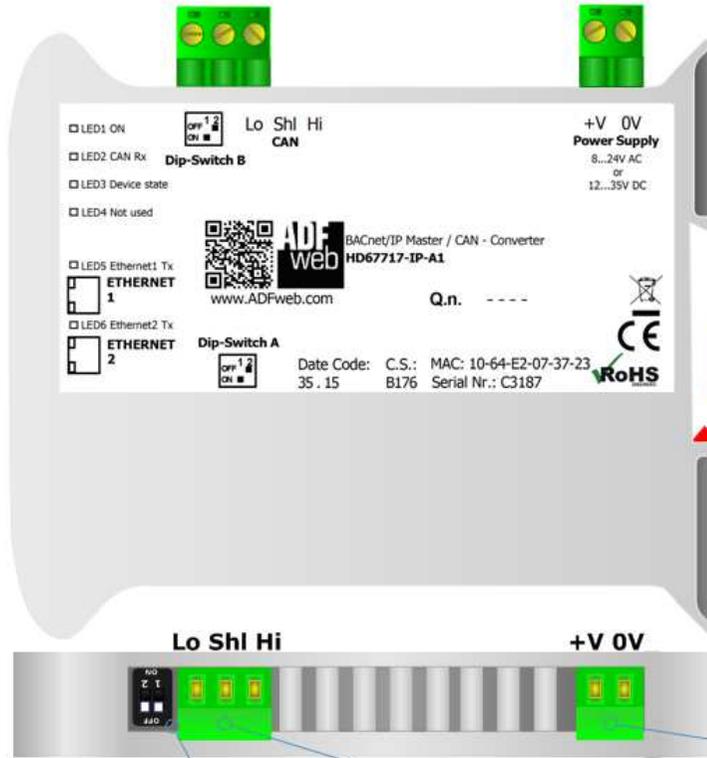
Led1:
Green
ON

Led2:
Green
CAN Rx

Led3:
Green
Device state

Led4:
Green
Not used

Led5:
Green
Not used

Connector3:
Ethernet1 Port
(RJ45 Plug)

Led6:
Green
Not used

Connector4:
Ethernet2 Port
(RJ45 Plug)

Connector1:
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 24V
V DC: min 12V ; max 35V

Dip-Switch B:
-Dip1 – CAN Termination Resistor
-Dip2 – Not used

= Open   = 120 Ohm

Connector2:
CAN (Isolated port)

Hi = High wire
Shl = Shield* (to Isolated Ground)
Lo = Low wire

LED1 ON
LED2 CAN Rx
LED3 Device state
LED4 Not used
LED5 Ethernet1 Tx
ETHERNET 1
LED6 Ethernet2 Tx
ETHERNET 2

Lo Shl Hi
CAN
Dip-Switch B

+V 0V
Power Supply
8...24V AC
or
12...35V DC

BACnet/IP Master / CAN - Converter
HD67717-IP-A1

www.ADFweb.com   Q.n.   - - - -

Dip-Switch A

Date Code: C.S.:   MAC: 10-64-E2-07-37-23
35 . 15   B176   Serial Nr.: C3187

Rail DIN Clamp

Lo Shl Hi   +V 0V

Figure 1a: Connection scheme for HD67717-IP-A1

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Dip-Switch A:
-Dip1 – Must be at ON
-Dip2 – Functioning Mode

= Normal   = Boot

Led4:
Yellow
CAN
Communication

Led3:
Green
BACnet
Communication

LED4 CAN comm.
LED3 BACnet comm.
+ - S
RS485 port
Dip-Switch B

Lo Shl Hi
CAN port
Dip-Switch C

+V 0V
Power Supply
8...24V AC
or
12...35V DC

LED2 Ethernet Link

BACnet MSTP Master / CAN - Converter
HD67717-MSTP-A1

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Ethernet

Dip-Switch A

LED1 Device state

C.S.: B185   MAC: 10-64-E2-07-49-54
Date Code: 35 . 15   Serial Nr.: C6212

RoHS

Led2:
Green
Ethernet Link

Connector5:
Ethernet Port
(RJ45 Plug)

Led1:
Green
Device State

Rail DIN
Clamp

A B S   Lo Shl Hi   +V 0V

Connector1:
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 24V
V DC: min 12V ; max 35V

Dip-Switch B:
-Dip1 – RS485 Termination Resistor

= Open   = 220 Ohm

-Dip2 – Not used

Connector3:
RS485 (Isolated port)

S = Shield* (to Isolated Ground)
B = Negative wire
A = Positive wire

Dip-Switch C:
-Dip1 – CAN Termination Resistor
-Dip2 – Not used

= Open   = 120 Ohm

Connector2:
CAN port (Isolated port)

Hi = High wire
Shl = Shield* (to Isolated Ground)
Lo = Low wire

Figure 1b: Connection scheme for HD67717-MSTP-A1

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Dip-Switch A:
-Dip1 – Must be at ON
-Dip2 – Functioning Mode

= Normal   = Boot

Dip-Switch B:
-Dip1 – Not used
-Dip2 – RS485 Termination Resistor

= Open   = 120 Ohm

Connector3:
RS485 (Isolated port)

S = Shield* (to Isolated Ground)
B = Negative wire
A = Positive wire

Dip-Switch C:
-Dip1 – Not used
-Dip2 – CAN Termination Resistor

= Open   = 120 Ohm

Connector2:
CAN port (Isolated port)

Hi = High wire
Shl = Shield* (to Isolated Ground)
Lo = Low wire

A   B   S   Lo Shl Hi

Power Supply   MAC: 10-64-E2-07-34-B0   ETHERNET
0V   +V   Serial Nr.: C2559
8...24V AC
or   Q.n. - - - -   LED
12...35V DC
                                  Device state
                                  CAN comm.
                                  BACnet comm.
www.ADFweb.com   Not used
HD67717-MSTP-B2
BACnet MSTP Master / CAN - Converter
Dip-Switch A Dip-Switch B+   -   S Dip-Switch C Lo Shl Hi
         RS485 port   CAN port

Led1:
Green
Device state

Led4:
Yellow
CAN
communication

Led3:
Yellow
BACnet
communication

Led5:
Yellow
Not used

0V +V

Connector1:
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 24V
V DC: min 12V ; max 35V

Connector5:
Ethernet Port
(RJ45 Plug)

Led2:
Green
Ethernet Link

Figure 1c: Connection scheme for HD67717-MSTP-B2

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Industrial Electronic Devices

Dip-Switch A:
-Dip1 – Must be at ON
-Dip2 – Functioning Mode

= Normal   = Boot

Connector 4:
Port RS232 (D-SUB9-Male)
(Isolated Port)

PIN2 = RX
PIN3 = TX
PIN5 = GND* (to Isolated Ground)

Used for:
 - Programmation Port
 - Modbus on RS232

To connect the device to the COM port of a PC in order to set it you have to use the programming cable AC34107 or a cable made as showed here:

CABLE Side A FEM   CABLE Side B FEM

Led4:
Yellow
CAN Communication

Led3:
Green
BACnet Communication

Led2:
Green
Ethernet Link

Connector5:
Ethernet Port
(RJ45 Plug)

Led1:
Green
CAN Communication

□ LED4 CAN comm.
□ LED3 BACnet comm.
RS232
□ LED2 Ethernet Link
Ethernet
□ LED1 Device state

Lo Shl Hi   +V   0V
CAN port   Power Supply
Dip-Switch C   8...24V AC
or
12...35V DC

BACnet PTP Master / CAN - Converter
HD67717-PTP-A1

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Q.n.   - - - -

Dip-Switch A
C.S.: B18S   MAC: 10-64-E2-07-49-54
Date Code: 35 . 15   Serial Nr.: C6212

RoHS   CE

Rail DIN Clamp

Lo Shl Hi   +V 0V

Dip-Switch C:
-Dip1 – CAN Termination Resistor
-Dip2 – Not used

= Open   = 120 Ohm

Connector2:
CAN port (Isolated port)

Hi = High wire
ShI = Shield* (to Isolated Ground)
Lo = Low wire

Connector1:
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 24V
V DC: min 12V ; max 35V

Figure 1d: Connection scheme for HD67717-PTP-A1

![ADFweb logo] Industrial Electronic Devices

Dip-Switch A:
-Dip1 – Must be at ON
-Dip2 – Functioning Mode

= Normal   = Boot

Connector 4:
Port RS232 (D-SUB9-Male)
(Isolated Port)

PIN2 = RX
PIN3 = TX
PIN5 = GND* (to Isolated Ground)

Used for:
- BACnet

To connect the device to the COM
port of a PC in order to set it you
have to use the programming
cable AC34107 or a cable made as
showed here:

CABLE
Side A
FEM

CABLE
Side B
FEM

Dip-Switch C:
-Dip1 – Not used
-Dip2 – CAN Termination Resistor

= Open   = 120 Ohm

Connector2:
CAN port (Isolated port)

Hi = High wire
Shl = Shield* (to Isolated Ground)
Lo = Low wire

Led1:
Green
Device state

Led4:
Yellow
CAN
communication

Led3:
Yellow
BACnet
communication

Led5:
Yellow
Not used

Lo Shl Hi

Power Supply
0V +V
8...24V AC
or
12...35V DC

Q.n. - - - -

HD67717-PTP-B2
BACnet PTP Master / CAN - Converter

MAC: 10-64-E2-07-34-B0
Serial Nr.: C2559

Dip-Switch A   Dip-Switch C Lo Shl Hi

RS232

ETHERNET
LED
Device state
CAN comm.
BACnet comm.
Not used

CAN port

0V +V

Connector1:
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 24V
V DC: min 12V ; max 35V

Connector5:
Ethernet Port
(RJ45 Plug)

Led2:
Green
Ethernet Link

Figure 1e: Connection scheme for HD67717-PTP-B2

Industrial Electronic Devices

CHARACTERISTICS:

The HD67717-IP-A1, HD67717-MSTP-A1/B2 and HD67717-PTP-A1/B2 are BACnet Master / CAN - Converters.

They have the following characteristics:

➔ Up to 512 BACnet objects in reading and 512 objects in writing;
➔ Up to 500 CAN frames in reading and 500 CAN frames in writing;
➔ Triple isolation between BACnet - Power Supply, BACnet - CAN, Power Supply - CAN.
➔ Two-directional information between BACnet and CAN;
➔ Mountable on 35mm Rail DIN;
➔ Wide power supply input range: 8…24V AC or 12…35V DC;
➔ Wide temperature range: -40°C / 85°C [-40°F / +185°F].

CONFIGURATION:

You need Compositor SW67717 software on your PC in order to perform the following:

➔ Define the parameter of BACnet line;
➔ Define the parameter of CAN line;
➔ Define CAN frames that the converter can accept;
➔ Define CAN frames that the converter can send;
➔ Define the BACnet data that the master reads;
➔ Define the BACnet data that the master writes;
➔ Update the device.

Industrial Electronic Devices

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**
8V	**24V**	**12V**	**35V**

Consumption at 24V DC:

Device	Consumption [W/VA]
HD67717-IP-A1	3.5
HD67717-PTP-A1/B2	3.5
HD67717-PTP-B2/B2	3.5

Connector1:
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 24V
V DC: min 12V ; max 35V

0V +V

Connector1:
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 24V
V DC: min 12V ; max 35V

0V +V
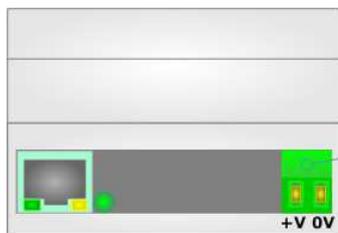
Connector1:
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 24V
V DC: min 12V ; max 35V

+V 0V

Caution: Not reverse the polarity power

0V   +V
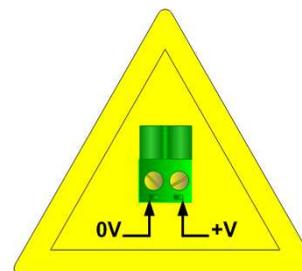
HD67717-IP-A1
HD67717-MSTP-A1
HD67717-PTP-A1

+V   0V
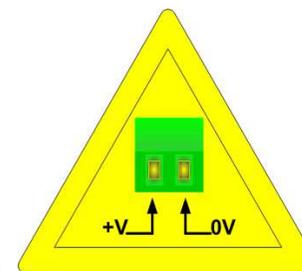
HD67717-MSTP-B2
HD67717-PTP-B2

FUNCTION MODES:

The device has got two functions mode depending of the position of the 'Dip2 of Dip-Switch A':

- The first, with 'Dip2 of Dip-Switch A' at "OFF" position, is used for the normal working of the device.
- The second, with 'Dip2 of Dip-Switch A' at "ON" position, is used for upload 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.
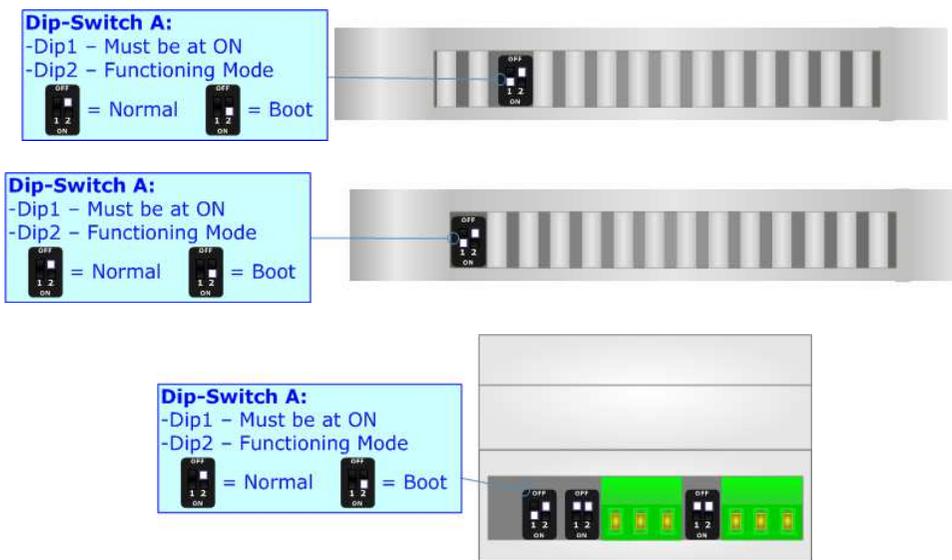
Warning:
Dip1 of 'Dip-Switch A' must be at ON position for working even if the Ethernet cable isn't inserted.

Industrial Electronic Devices

LEDS:

HD67717-IP-A1

The device has got six 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: ON	**ON:** Device powered **OFF:** Device not powered	**ON:** Device powered **OFF:** Device not powered
2: CAN Rx	Blinks quickly when a CAN frame defined in the section "Receive Frames" of Compositor is received	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
3: Device State	Blinks slowly (~1Hz)	**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: Not used	OFF	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
6: Not used	OFF	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress

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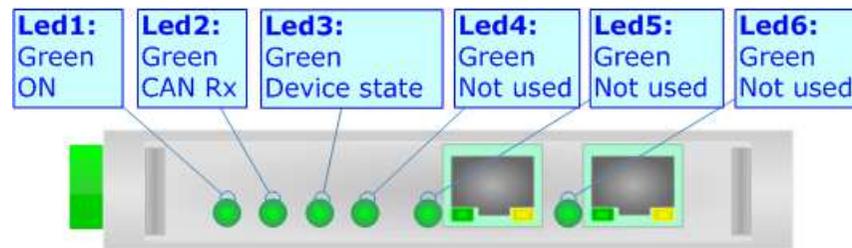
HD67717-MSTP-A1 and HD67717-PTP-A1

The device has four 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	Blinks slowly (~1Hz)	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
2: Link Ethernet	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected
3: BACnet communication	Blinks quickly when BACnet response is received	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
4: CAN Communication	Blinks quickly when a CAN frame defined in the section "Receive Frames" of Compositor is received	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress

Led4:
Yellow
CAN comm.

Led3:
Green
BACnet comm.

Led2:
Green
Ethernet Link

Led1:
Green
Device State

Industrial Electronic Devices
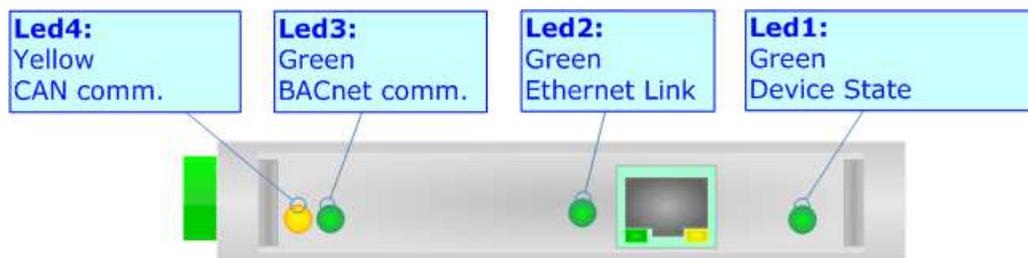
HD67717-MSTP-B2 and HD67717-PTP-B2

The device has 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	Blinks slowly (~1Hz)	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
2: Link Ethernet	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected
3: BACnet communication	Blinks quickly when a BACnet 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: CAN Communication	Blinks quickly when a CAN frame defined in the section "Receive Frames" of Compositor is received	**Blinks quickly: Boot state** **Blinks very slowly (~0.5Hz): update in progress**

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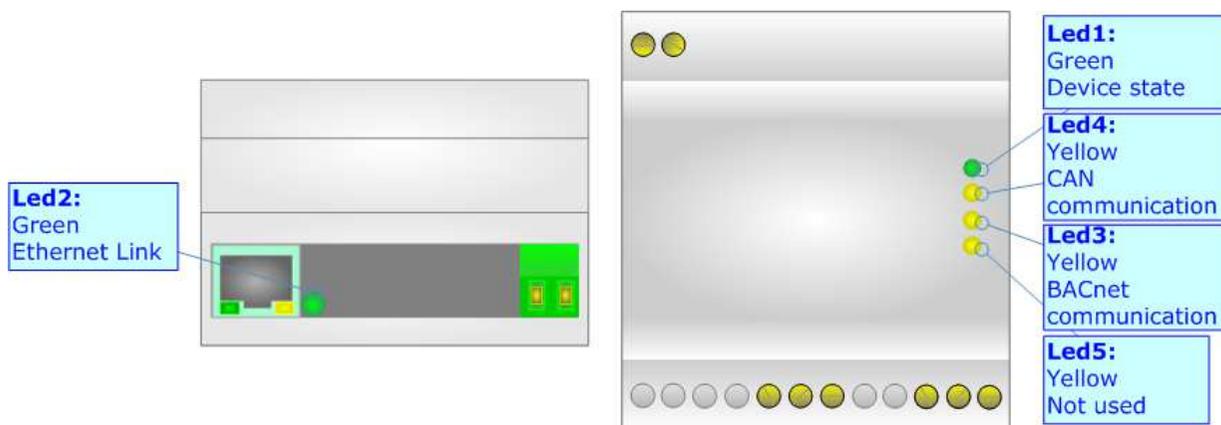
CAN:

For terminating the CAN line with a 120Ω resistor it is necessary to put Dip1 of 'Dip-Switch C' (for codes HD67717-IP-A1, HD67717-MSTP-A1 and HD67717-PTP-A1) or Dip2 of 'Dip-Switch C' (for code HD67717-MSTP-B2 and HD67717-PTP-B2) at ON position.
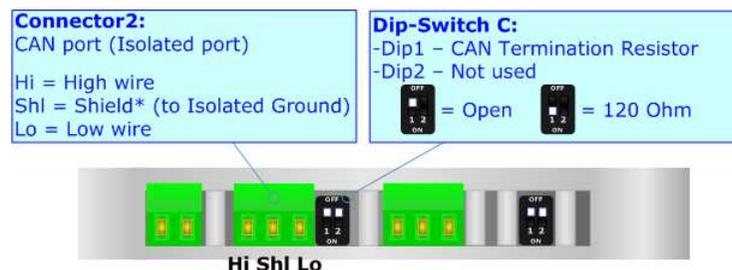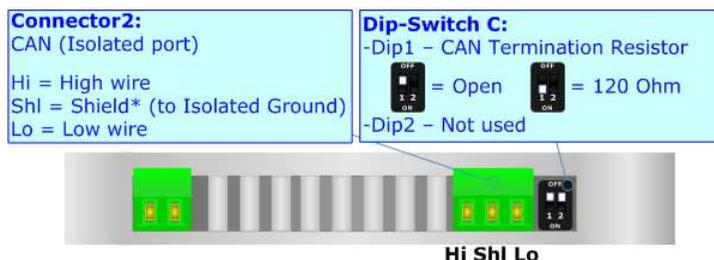
Cable characteristics:

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

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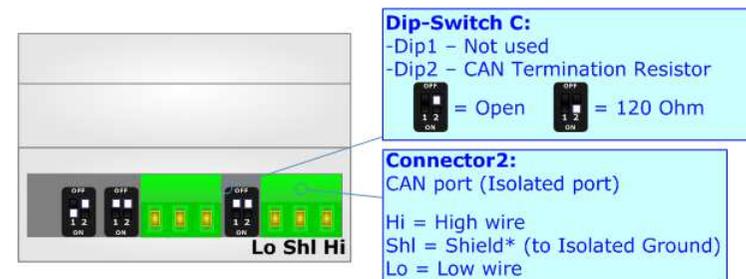
ETHERNET:

HD67717-IP-A1

The Ethernet ports are used for BACnet/IP communication and for programming the device.
The BACnet/IP connection must be made using Connector3 and/or Connector4 of HD67717-IP-A1 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.
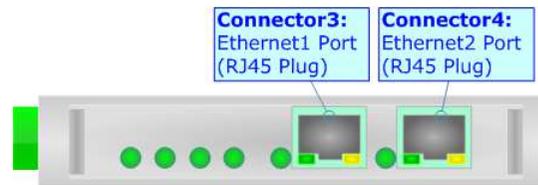
HD67717-MSTP-A1/B2, HD67717-PTP-A1/B2

The Ethernet port is used for programming the device.
The Ethernet connection must be made using Connector5 of HD67717-MSTP-A1/B2 or HD67717-PTP-A1/B2 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.

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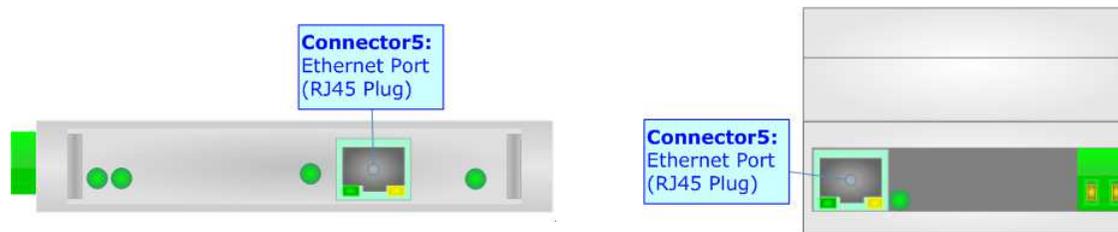
RS485:

The RS485 port is present only for the BACnet MS/TP devices (HD67717-MSTP-A1 and HD67717-MSTP-B2).

For terminating the CAN line with a 220Ω resistor it is necessary to put Dip1 of 'Dip-Switch B' (for code and HD67717-MSTP-A1) or Dip2 of 'Dip-Switch B' (for code HD67717-MSTP-B2) at ON position.

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.

RS232

The connection from RS232 socket to a serial port (for the HD67717-PTP-A1 or HD67717-PTP-B2) must be made with a NULL MODEM cable (a serial cable where the pins 2 and 3 are crossed).
It is recommended that the RS232 cable not exceed 15 meters.

Industrial Electronic Devices
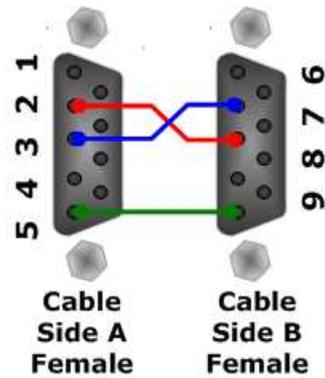
USE OF COMPOSITOR SW67717:

To configure the Converter, use the available software that runs with Windows called SW67717. It is downloadable from 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 SW67717, the window below appears (Fig. 2).

Note:
    It is necessary to have installed .Net Framework 4.
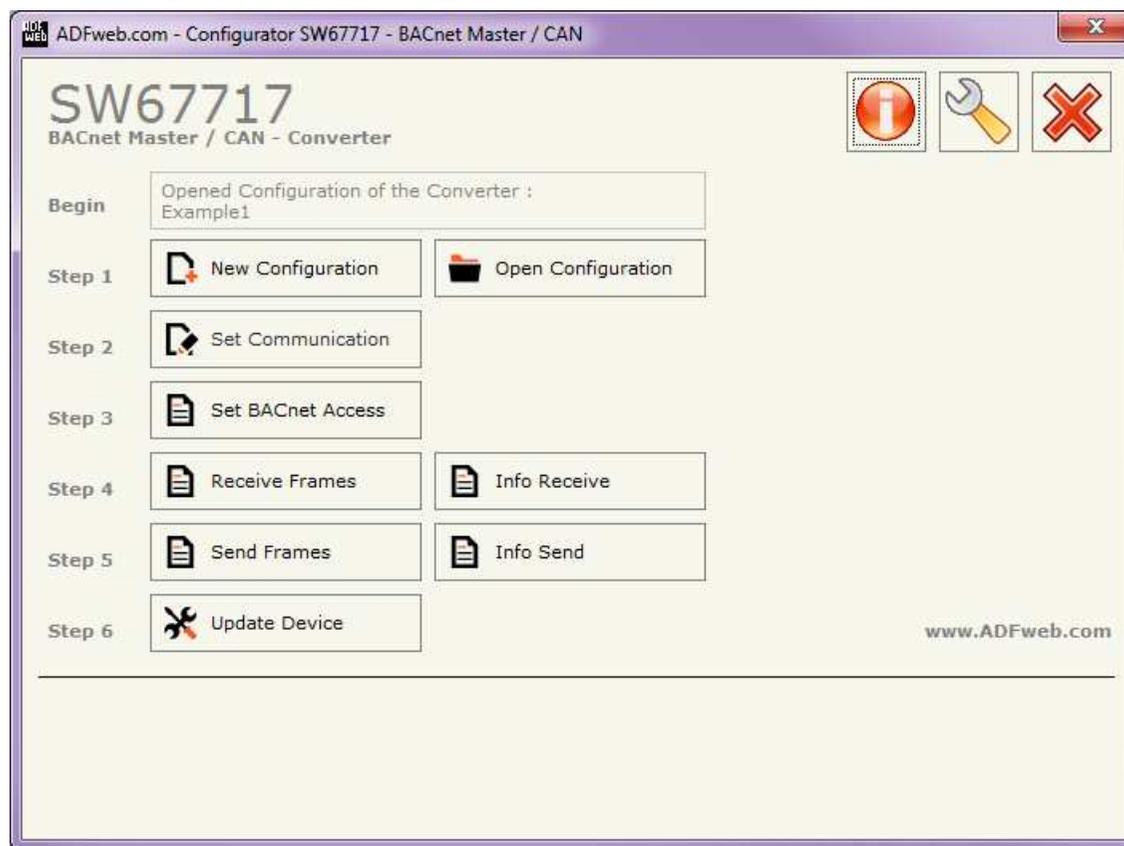
Figure 2: Main window for SW67717

Industrial Electronic Devices

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 "BACnet Master / CAN - 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**".

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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.
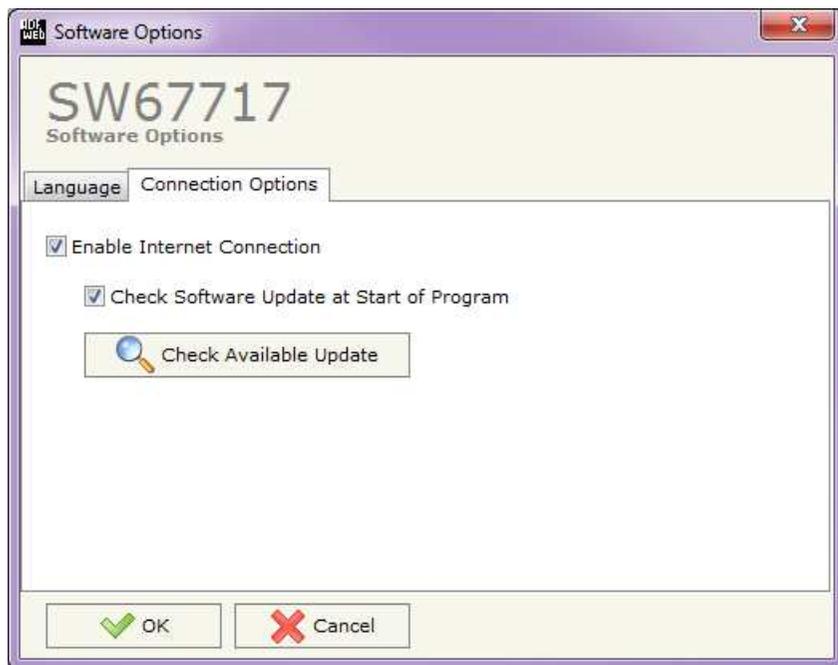
In the section "Connection Options", it is possible to check if there are some updatings of the software compositor in ADFweb.com website.
Checking the option "**Check Software Update at Start of Program**", the SW67717 check automatically if there are updatings when it is launched.

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SET COMMUNICATION:

This section define the fundamental communication parameters of two buses, BACnet and CAN.

By Pressing the "**Set Communication**" button from the main window for SW67717 (Fig. 2) the window "Set Communication" appears (Fig. 3).
The window is divided in three sections, one for selecting the type of BACnet (in relation to the device bought), one for the BACnet parameters and the other for the CAN parameters.

In the section "BACnet Type" is possible to select the type of BACnet to use from:

- BACnet/IP (uses ethernet);
- BACnet MS/TP (uses RS485);
- BACnet PTP (uses RS232).

If selected "BACnet/IP" the means of the fields for "BACnet" are:

- In the fields "**IP ADDRESS**" insert the IP address that you want to give to the Converter;
- In the fields "**SUBNET Mask**" insert the SubNet Mask;
- In the fields "**GATEWAY**" insert the default gateway that you want to use. This feature can be enabled or disabled pressing the Check Box field. This feature is used for going out of the net;
- In the field "**Port**" the port number used for BACnet communication is defined. The default port used for BACnet communication is 47808, but is possible to insert any value (except 10000 and 10001);
- In the field "**BACnet Device Name**" is possible to assign a name to the BACnet node;
- In the field "**Device Identifier**" is possible to assign a number to the BACnet node (Used for the Device Identifier).

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

- In the field "**Baudrate**" it is possible to select the baudrate of the CAN line.
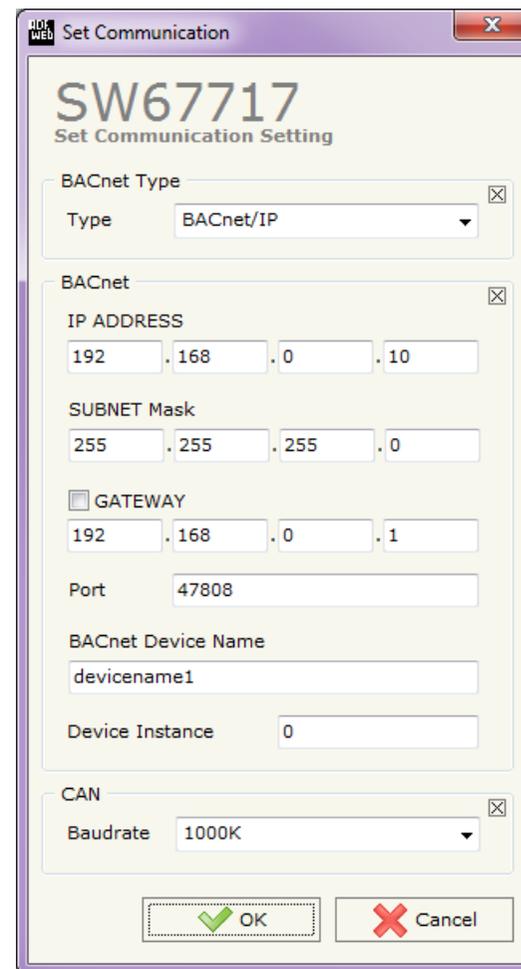
Figure 3: "Set Communication" window

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If selected "BACnet MS/TP" the means of the fields for "BACnet" are:

➢ In the field "**Baudrate**" it is possible to select the baudrate of the BACnet line (1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200);

➢ In the field "**Parity**" it is possible to select the parity of the line (None, Odd, Even);

➢ In the field "**BACnet Device Name**" is possible to insert the name to give to the BACnet node (maximum 17 characters);

➢ In the field "**MAC Address**" is possible to define the MAC of BACnet node (from 0 to 254);

➢ The field "**Max Masters**" specifies the highest allowable address for master nodes. The value shall be less than or equal to 127;

➢ The field "**Max Info Frames**" specifies the maximum number of information frames the node may send before it must pass the token.

If selected "BACnet PTP" the means of the fields for "BACnet" are:

➢ In the field "**Baudrate**" it is possible to select the baudrate of the BACnet line (1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200);

➢ In the field "**Parity**" it is possible to select the parity of the line (None, Odd, Even);

➢ In the field "**BACnet Device Name**" is possible to insert the name to give to the BACnet node (maximum 17 characters);

The means of the fields for the "Ethernet Update" section are:

➢ In the fields "**IP ADDRESS**" insert the IP address that you want to give to the Converter;

➢ In the fields "**SUBNET Mask**" insert the SubNet Mask;

➢ In the fields "**GATEWAY**" insert the default gateway that you want to use. This feature can be enabled or disabled pressing the Check Box field. This feature is used for going out of the net.

These information are used for programming the Converter.

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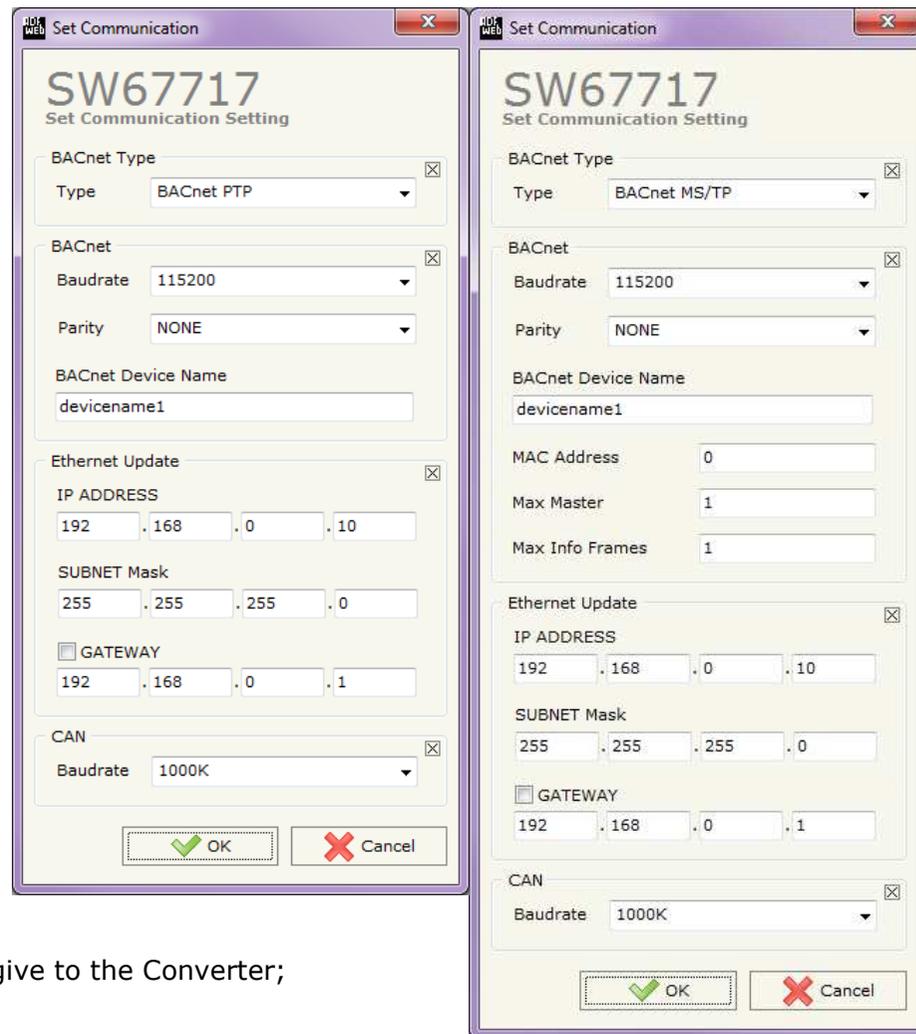
SET BACNET ACCESS:

By Pressing the "**Set BACnet Access** " button from the main window of SW67717 (Fig. 2), the window "Set BACnet Access" appears (Fig. 4).

The window is divided in two parts, the "**BACnet in Read**" that contains the BACnet objects that the Converter goes to read from the slaves; and "**BACnet in Write**" that contains the BACnet objects that the Converter goes to write into the slaves.
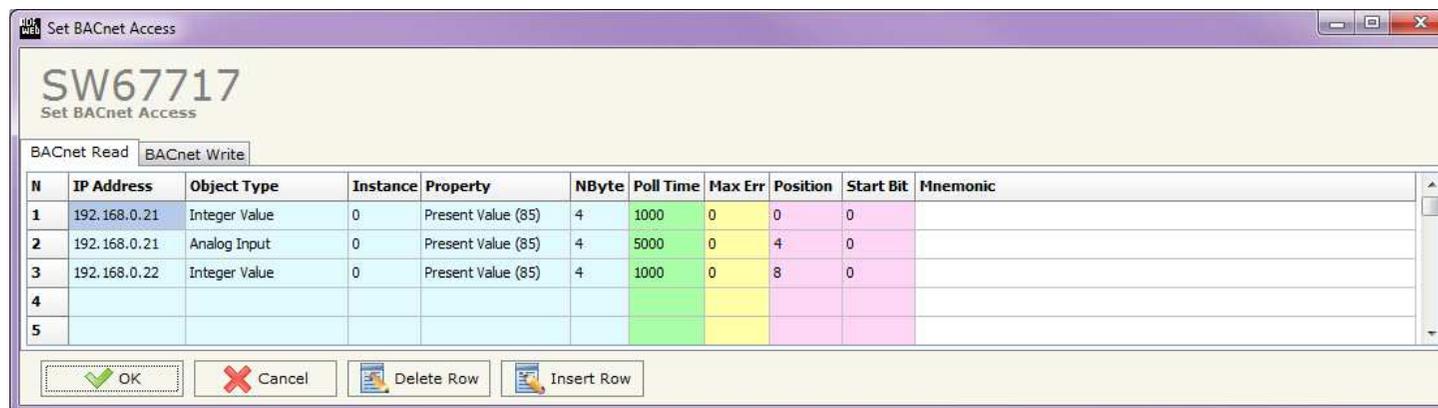
Figure 4a: "BACnet Set Access → BACnet Read" window

The means of the fields in the window (Read) are the follows:

- In the field "**IP Address**" insert the IP address of the slave that contains the data to be read;
- In the field "**Object Type**" select the object to be read;
- In the field "**Instance**", define the instance number of the object;
- In the field "**Property**" select the property to be read;
- In the field "**NByte**", define the number of bytes reserved for saving the information on CAN;
- In the field "**Poll Time**" define the frequency of the request;
- In the field "**Max Error**" insert the number of consecutive errors that the Master waits before discard the row from the cycle of requests;
- In the field "**Position**" is possible to select the position where save the data into a 6000 bytes array;
- The field "**Start Bit**" is used for the "Binary Input" and "Binary Output" BACnet objects. Is possible to select the position in the byte where save the data;
- In the field "**Mnemonic**" is possible to insert a description of the data inserted in the row.

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The means of the fields in the window (Write) are the follows:

- In the field "**IP Address**" insert the IP address of the slave where the data are written;
- In the field "**Object Type**" select the object to be written;
- In the field "**Instance**", define the instance number of the object;
- In the field "**Property**" select the property to be written;
- In the field "**NByte**", define the number of bytes sent in the request;
- By checking the field "**Change**" the BACnet write request is made only if CAN data are changed; otherwise (if is selected the field "**Timer**") is sent cyclically, using the "Poll Time";
- In the field "**Poll Time**" define the frequency of the request;
- In the field "**Max Error**" insert the number of consecutive errors that the Master waits before discard the row from the cycle of requests;
- In the field "**Position**" is possible to select the position where take the data to write in the request from a 6000 bytes array;
- The field "**Start Bit**" is used for the "Binary Output" BACnet objects. Is possible to select the position in the byte where save the data;
- In the field "**Mnemonic**" is possible to insert a description of the data inserted in the row.

N	IP Address	Object Type	Data Type	Instance	Property	Priority	NByte	Change	Timer	Poll Time	Max Err	Position	Start Bit	Mnemonic
1	192.168.0.21	Analog Output	Real	0	Present Value (85)	0	4	☐	☑	2500	0	0	0	
2	192.168.0.21	Integer Value	Signed Int	0	Present Value (85)	0	4	☑	☑	1000	0	4	0	
3	192.168.0.22	Analog Output	Real	0	Present Value (85)	0	4	☐	☑	2500	0	8	0	
4								☐	☐					
5								☐	☐					
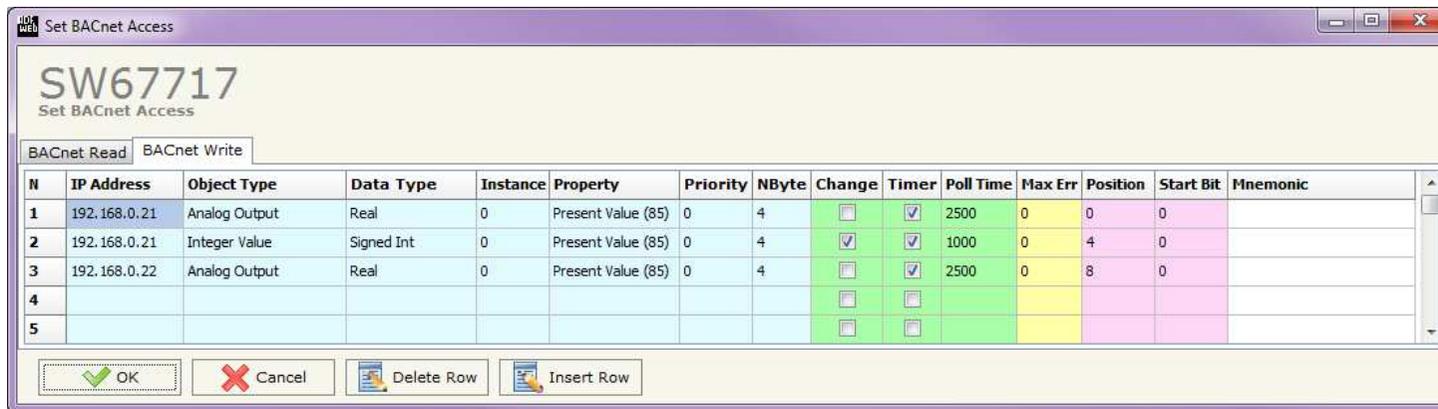
*Figure 4b: "BACnet Set Access → BACnet Write" window*

RECEIVE FRAMES:

By pressing the "**Receive Frames**" button from the main window for SW67717 (Fig. 2) the "Receive CAN Frames" window appears (Fig. 5).

The COB inserted in this table contains the data that the converter will write to the BACnet slaves. These frames are accepted by the Converter.

The data of the columns have the following meanings:

 - In the field "**Cob-ID**" insert the COB of the CAN frame;
 - In the field "**Type**" is possible to select which type of CAN packet use for this Cob-ID; or 2.0A (11 bits) or 2.0B (29 bits);
 - In the field "**Dimension**" insert the number of byte of the COB (from 1 to 8);
 - The field "**TimeOut**" is used for put at zero the data into BACnet if the CAN frame don't arrives with a frequency less than the time expressed in the field. If the value in the field is 0, means that you don't want to use this feature, and so the value is never deleted;
 - In the field "**Mnemonic**" it is possible to insert a brief description.
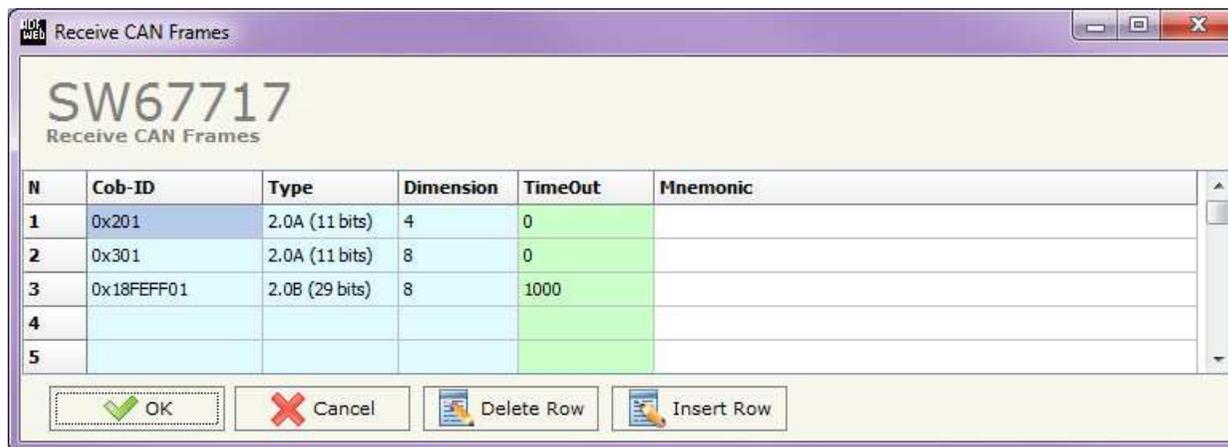
Figure 5: "Receive CAN Frames" window

INFO RECEIVE:

By pressing the "**Info Receive**" button from the main window for SW67717 (Fig. 2) the "Receive CAN Frames Info" window appears (Fig. 6).

→ In the "**COB ID**" field there are the COB ID that you have inserts in the "Receive CAN Frames" window;
→ In the "**Bytes**" field select the correspondence of the byte in BACnet.

For example:
Byte 1 of frame CAN go to byte 0 in BACnet: the first byte of CAN frame is 0x11, in the byte 0 of BACnet I can read 0x11.
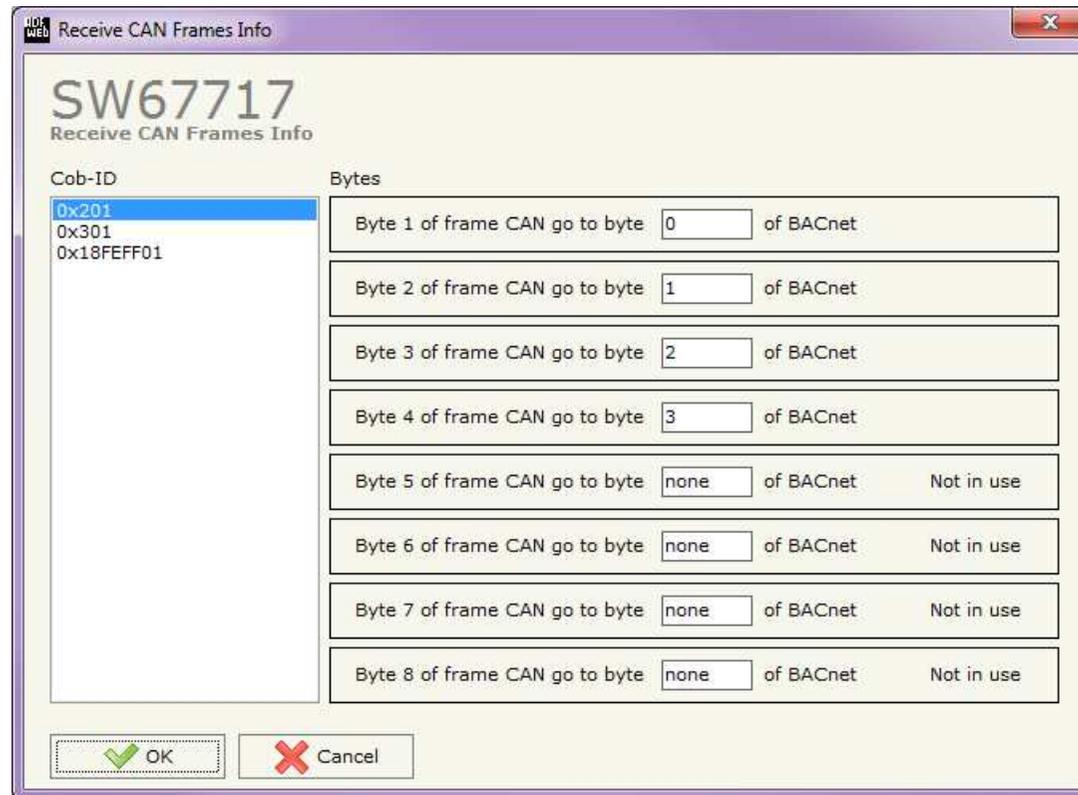
Figure 6: "Receive CAN Frames Info" window

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SEND FRAMES:

By pressing the "**Send Frames**" button from the main window for SW67717 (Fig. 2) the "Send CAN frames" window appears (Fig. 7).

The COB inserted in this table contains the data that the converter will read from the BACnet slaves. These frames are sent by the Converter.

The data of the columns have the following meanings:

- In the field "**Cob-ID**" insert the COB of the CAN frame;
- In the field "**Type**" is possible to select which type of CAN packet use for this Cob-ID; or 2.0A (11 bits) or 2.0B (29 bits);
- In the field "**Dimension**" insert the number of byte of the COB (from 1 to 8);
- In the field "**Send Frame Type**" is possible to select when send the CAN frame. There are two options: the first is "**On Data Change**", the frame is sent when the data changes; the second is "**On Times**" and the frame is send cyclically;
- In the field "**Timer Send**" insert the interval used for the "Send Frame Type On Times". The time is in milliseconds;
- In the field "**Mnemonic**" it is possible to insert a brief description.
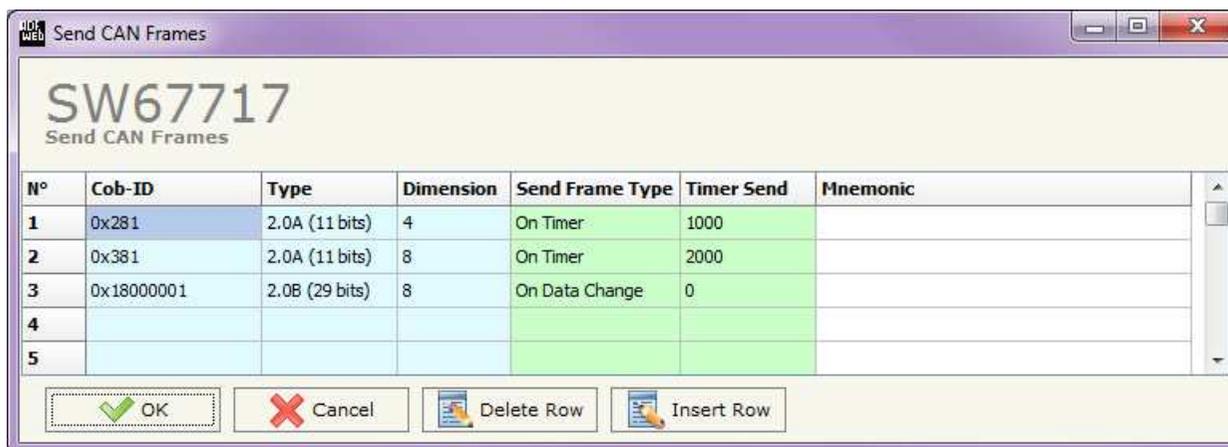
Figure 7: "Send CAN Frames" window

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INFO SEND:

By pressing the "**Info Send**" button from the main window for SW67717 (Fig. 2) the "Send CAN Frames Info" window appears (Fig. 8).

➔ In the "**COB ID**" field there are the COB ID that you have inserts in the "Send CAN frames" window;
➔ In the field "**Bytes**" select the correspondence of the byte in BACnet.

For example:
Byte 1 of frame CAN is byte 0 in BACnet: the byte 0 of BACnet is 0x22, the first byte of CAN frame with COB=0x201 will be 0x22.
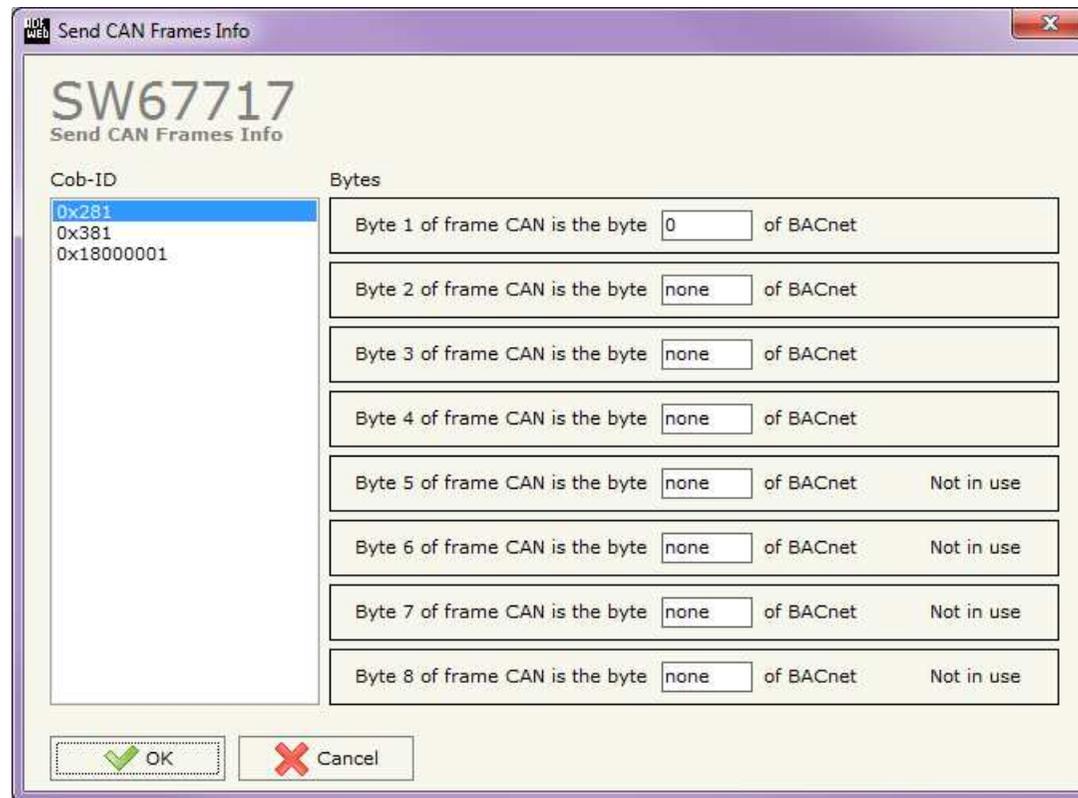
Figure 8: "Send Frames Info" window

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UPDATE DEVICE:

By pressing the "**Update Device**" button, it is possible to load the created configuration into the device; and also the Firmware, if necessary.

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

- Turn off the Device;
- Put Dip2 of 'Dip-Switch A' in ON position;
- Turn on the device
- Connect the Ethernet cable;
- Insert the IP "**192.168.2.205**";
- Press the "**Ping**" button, "Device Found! must appear";
- Press the "**Next**" button;
- 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 Dip2 of 'Dip-Switch A' in OFF position;
- Turn on the device.

At this point the configuration/firmware on the device is correctly updated.
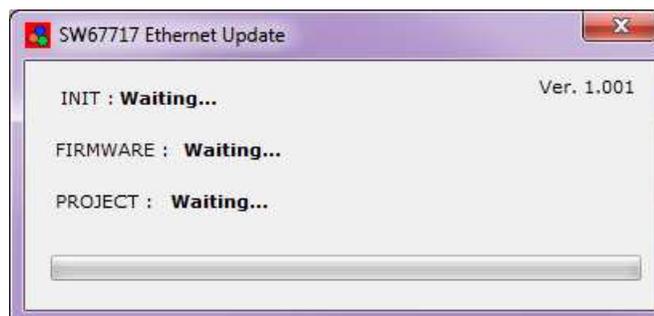
Figure 9: "Update device" windows

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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;
 + Press the "**Ping**" button, must appear "Device Found!";
 + Press the "**Next**" button;
 + 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 update.

Note:
    When you install a new version of the software, if it is the first time it is better you do the update of the Firmware in the HD67717 device.

Note:
    When you receive the device, for the first time, you also have to update the Firmware in the HD67717 device.

Warning:

   If Fig. 10 appears when you try to do the Update try these points before seeking assistance:

 + Try to repeat the operations for the update;
 + Try with another PC;
 + Try to restart the PC;
 + If you are using the program inside a Virtual Machine, try to use it in the main Operating System;
 + If you are using Windows Seven or Vista or 8, make sure that you have the administrator privileges;
 + Pay attention to the Firewall lock;
 + Check the LAN settings.

Figure 10: "Protection" window

   In the case of HD67717 you have to use the software "SW67717": www.adfweb.com\download\filefold\SW67717.zip.

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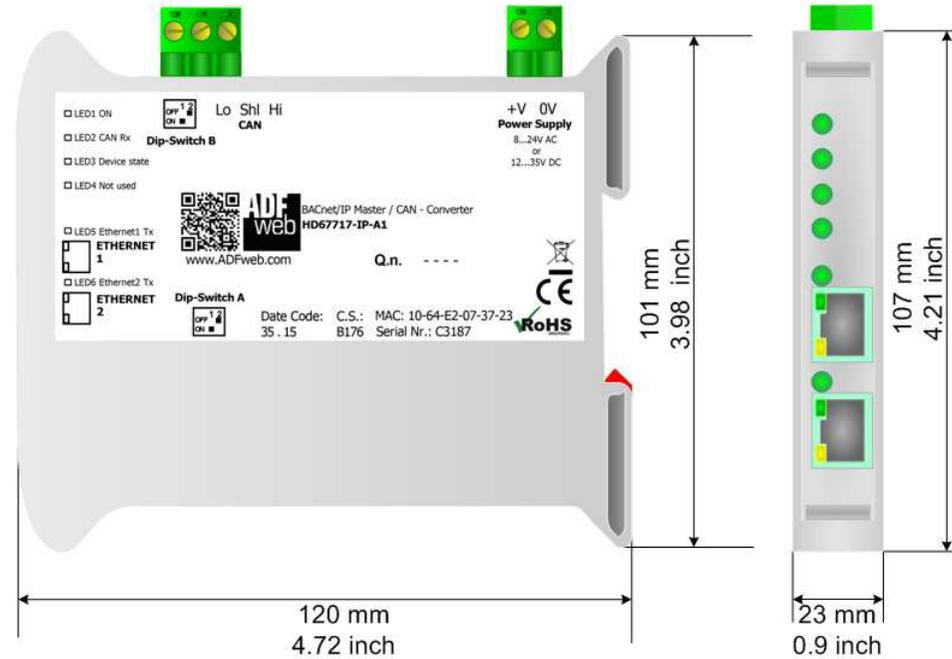
MECHANICAL DIMENSIONS:

Figure 11a: Mechanical dimensions scheme for HD67717-IP-A1

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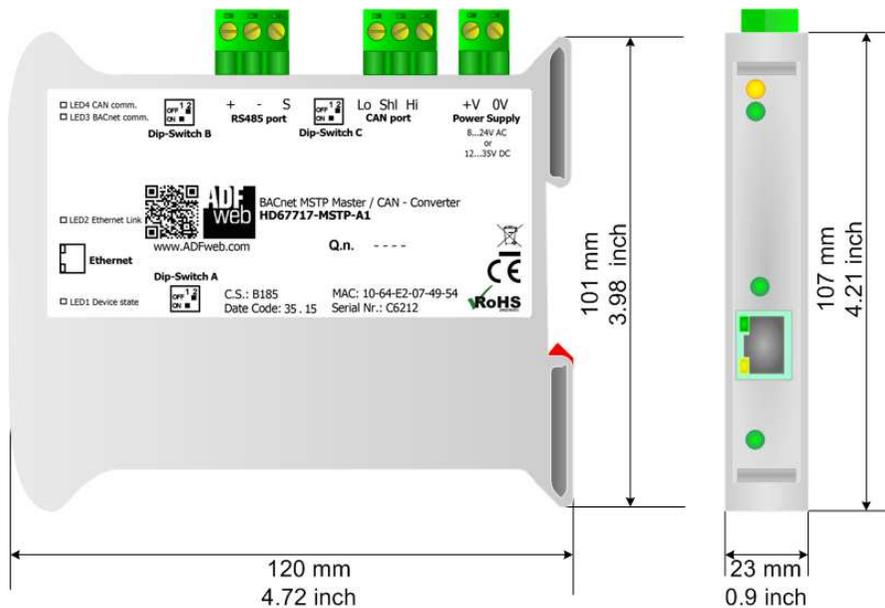
Figure 11b: Mechanical dimensions scheme for HD67717-MSTP-A1
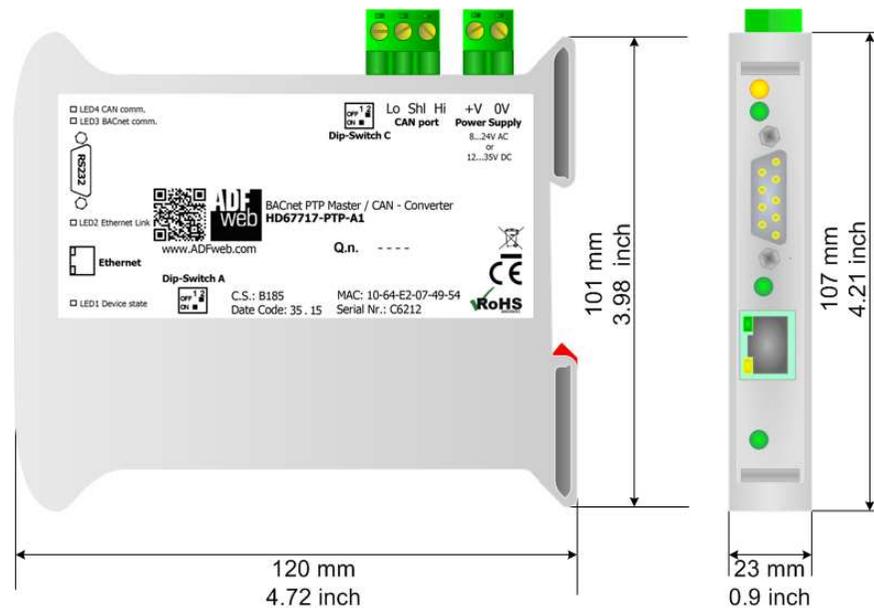
*Figure 11c: Mechanical dimensions scheme for HD67717-PTP-A1*

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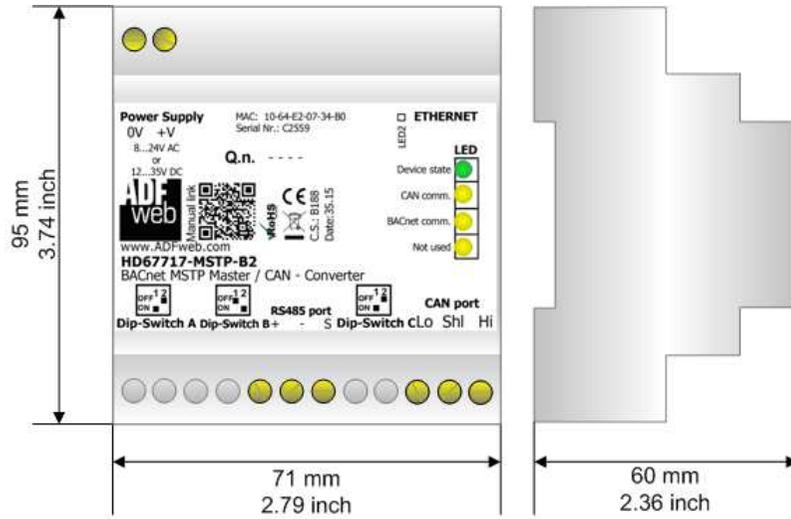
Figure 11d: Mechanical dimensions scheme for HD67717-MSTP-B2
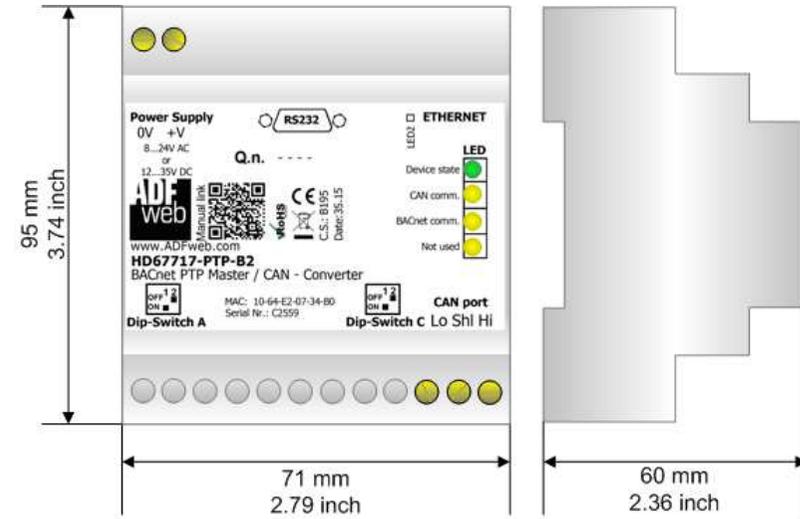
Figure 11e: Mechanical dimensions scheme for HD67717-PTP-B2

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ORDERING INFORMATIONS:

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

HD67717 – xxx – x x

Connectors Type
1: Removable 5mm Screw Terminal
2: Fixed 5mm Screw Terminal

Enclosure Type
A: 1M, 35mm DIN Rail mounting
B: 4M, 35mm DIN Rail mounting

BACnet type
IP: BACnet/IP
MSTP: BACnet MSTP
PTP: BACnet PTP

Device Family
HD67717: BACnet Master / CAN - Converter
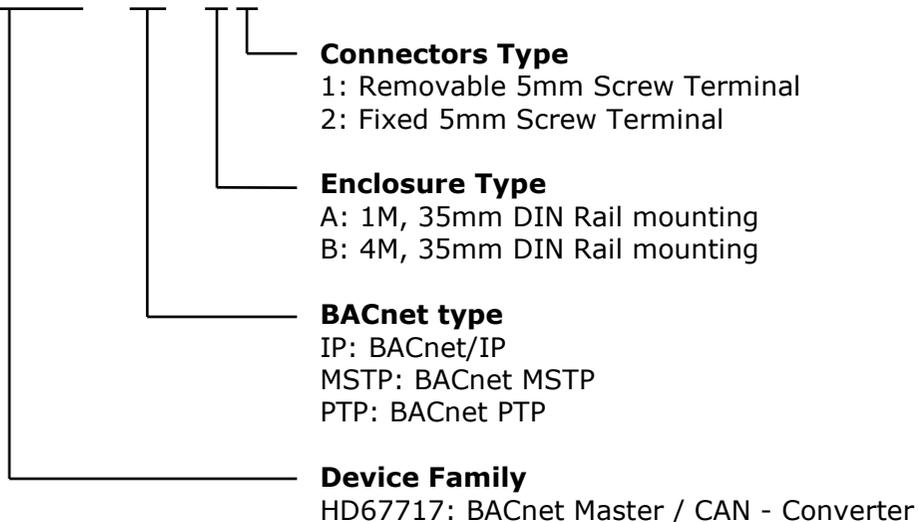
Order Code: **HD67717-IP-A1**   -   BACnet/IP Master / CAN - Converter
Order Code: **HD67717-MSTP-A1**   -   BACnet MS/TP Master / CAN - Converter
Order Code: **HD67717-MSTP-B2**   -   BACnet MS/TP Master / CAN - Converter
Order Code: **HD67717-PTP-A1**   -   BACnet PTP Master / CAN - Converter
Order Code: **HD67717-PTP-B2**   -   BACnet PTP Master / CAN - 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

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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.

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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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