CONV2-A version 2
Protocol converter from Bosch Bi-phase to Pelco-D
MANUAL INSTRUCTION

The converter is a microprocessor device, designed to control PTZ cameras with Pelco-D protocol by using keyboard (or recorders), working in Bosch / Philips Bi-Phase protocol. This allows for integration cameras of different producers with existing systems of Bosch company. The converter receives commands in Bi-Phase protocol and after translation the data by appropriate software, the commands are sending by RS-485 output.

1. Structure of connections

The converter is connected between keyboard and PTZ cameras and it requires 9~24V D or AC supply.
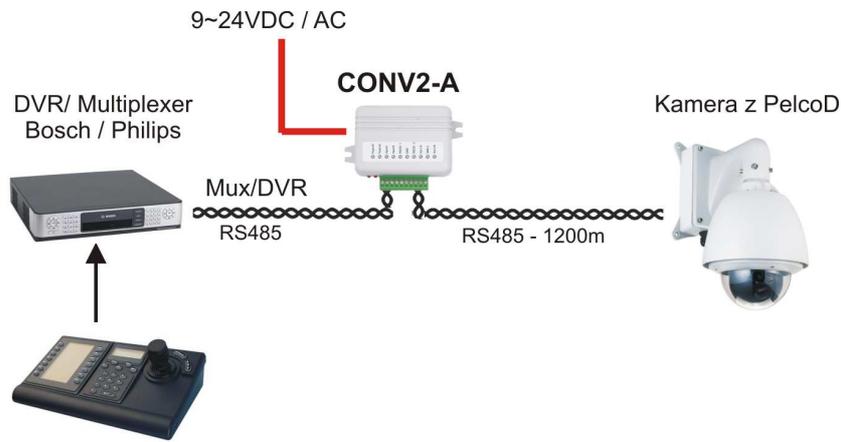
Connection diagrams of CONV2-A converter

2. Description of connection terminals
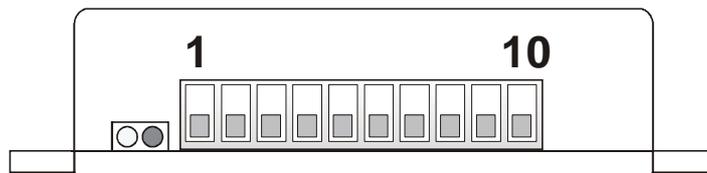
○ **LED1** – signal transmission of Pelco-D
● **LED2** – signal transmission of Bi-Phase
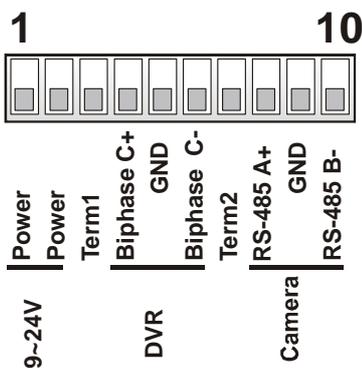
Power supply: It used to connection 9~24V DC / AC supply
RS-485 A/B: RS-485 interface, designed to connection keyboard
Term1: 120Ω terminating resistor for RS-485 interface
Biphase +/ -: Bi-Phase interface, designed to connection cameras
Term2: 120Ω terminating resistor for Bi-Phase interface
GND: Clamps of power ground (cable shield)

RS-485 interace, should be connected always in accordance with other devices
A to **A** and **B** to **B**.

Biphase interface, should be connected accordingly do clamps C+ i C- in keyboard with Bi-Phase output, in recorder or Video matrix.

C+ C- A+ B-

Internal connection

R   R

Wire
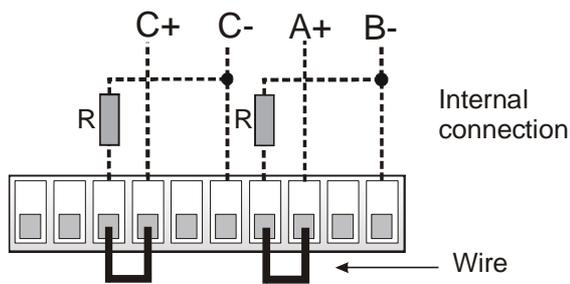
For longer cables of bus, both RS-485 interface and Biphase, should be included to terminating resistor. This will prevent wave reflections in cables, which are cause of transmission errors. Terminating resistors should be connected only in devices, which are of ends of the bus. Larger number of resistors will cause an excessive burden of transmission.

Switching resistors in converter consists in the combination wire clamp TERM1 with C+ and TERM2 with A+, respectively for RS-485 and Bi-phase interfaces.

3. Description of switches

SW1

1 2 3 4 5 6 7 8
ON

☐ OFF (Up)

▣ ON (Down)
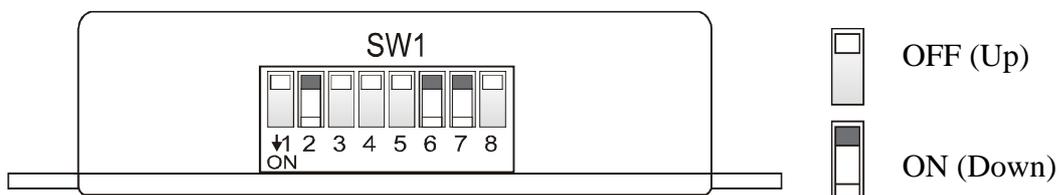
Description of switches:
Switches designed to define camera address, which will be supported by converter. CONV2-A work in two modes of switch settings:

1. MODE 1 - Address is set (All switches are OFF) Adres nie ustawiony
One converter support many cameras in address range 1-255. This mode are dedicated to systems, when exist only one Network keyboard.
2. MODE 2 – Selected one of the addresses (Switches connection according to table below)
One converter support only one camera in address range 1-255. This mode is dedicated to systems, which exist more than one keyboard. This provides stable work of the converter..

Address is set by binary form.

Number of camera	Number of switch							
	1	2	3	4	5	6	7	8
All addresses	-	-	-	-	-	-	-	-
1 camera	ON	-	-	-	-	-	-	-
2 camera	-	ON	-	-	-	-	-	-
3 camera	ON	-	ON	-	-	-	-	-
4 camera	-	-	-	ON	-	-	-	-
5 camera	ON	-	-	ON	-	-	-	-
6 camera	-	ON	-	ON	-	-	-	-
7 camera	ON	ON	-	ON	-	-	-	-
• • •				• • •				
128 camera	-	-	-	-	-	-	-	ON
• • •				• • •				
255 camera	ON	ON	ON	ON	ON	ON	ON	ON

4. Transmission settings

The converter has permanently defined baud rate for RS-485 interface:

Baudrate: 9600, 1 bit start, 1 bit stop, 8 bit data, parity: None

These parameters need to be set identically as in cameras connection to converter.

5. Start-up

All connections and configuration of switches, should be made with disconnect the power supply of converter. Should pay attention to correct polarity of RS-485 and Bi-Phase interfaces.

Correct working of converter can be determined by LED observing. If device is correct configured and connected, at the time of trying to control from desktop, both LEDs should blink.
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5. List of translated commands

Nr	Function of Bosch	Function of Pelco-D cameras
1	Joystick: UP, DOWN, LEFT, RIGHT, ZOOM, FOCUS, IRIS	Joystick: UP, DOWN, LEFT, RIGHT, ZOOM, FOCUS, IRIS
2	Set scene 1-99	Set preset 1-99
3	Set scene 101	Set left scan limit
4	Set scene102	Set right scan limit
5	Call scene 1-99	Call preset 1-99
6	Call scene 96	**Entry to menu camera**
7	Auto-Pan run	Auto-Pan run
8	SCAN run	Left to right scan run
9	Return to home position	Return to home position
10	Start learn pattern A	Start learn pattern
11	Stop learn pattern A	Stop learn pattern
12	Run pattern A - continuous	Run pattern
13	Turn 180º	Turn 180º (call preset 33)