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# **REMOTE UNIT CE380UR**

**FOR GAS SYSTEMS**

**CE700P  
CE700R**

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## DESCRIPTION

The CE380UR Remote Units transfer the information coming from the sensors to the Central Systems series CE700 (In production from January 2001).

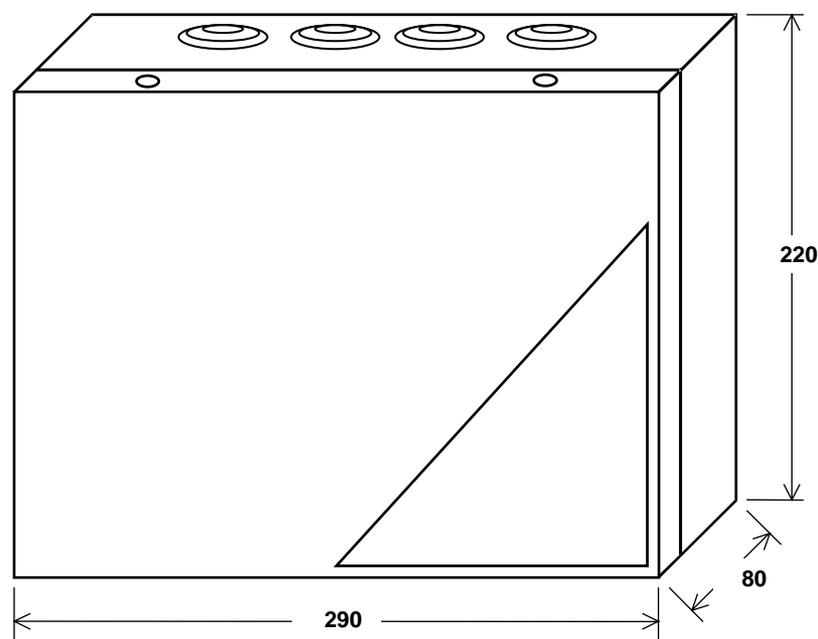
The CE380UR remote units are the peripheral units of the central systems CE700 for the data's acquisition, connected by an RS485 serial line can guarantee a maximum transmission distance of 1 Km.

Each unit is equipped of 8 inputs for both two and three wires 4-20mA linear transmitters.

The relay outputs are optional and completely addressable by the software. Each unit can be equipped up to two **ES380UR** cards with 4 output relay each (according to the customer needs).

The remote units consist of a wall mount metallic box with protection range IP54.

The internal power supplier at 230Vac has an output for plumb sealed buffer battery, 12V-3Ah dimensions 134x67x62, available on demand that can be installed from the end user.



## INSTALLATION

CE380UR remote unit installation consists in fixing the units on the wall and in the electrical connections with sensors, actuators and central system.

The position of the unit depends on the structure of the environment where it has to be placed and on the sensors to use in order to optimise the electric system.

**Opening the Cover:** The cover of the CE380UR remote unit can be opened by unscrewing the 4 screws placed on the cover edge (upper and bottom sides). Pay attention in removing the cover because it is connected to the mains terminal with the ground cable.

**Fixing:** The CE380UR unit has to be mounted on the wall with the three blocks using the holes on its rear side. We suggest you to mark and fix the central hole first, then you can mark the other two holes keeping the unit horizontal.

## Electrical connections

Electrical connections are all made on the rear panel and on the power supplier.

**Cables:** all need a cable terminal to allow a correct connection and to avoid false contacts problems.

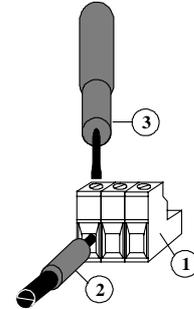
Cable sections to use depends on the sensors type and on the loads applied to the outputs to use. For more precise information see at [Page.9](#) and at used sensors specific instructions.

**Power Supply:** 230Vac 50Hz” to be connected to the terminal “L, N and Ground” ([Fig.3](#))

**Terminals:** ([Fig.1](#)) they are polarized clutch type (1), we suggest to use cable terminals adequate to the conductors (2) and to fix the cables to the box structure to avoid too much stress to the circuits and to the terminals.

Terminals are placed on the bottom panel for the inputs and outputs connection.

Connection schemes showed in [Fig.4, 5 e 6](#), are always indicated with all the 8 sensors and all outputs (two expansion cards ES380UR).



*Fig.1 - Polarized clutch type terminals*

**Battery:** if present is connected to cables “BAT+” (Red) and “BAT-” (Black). ([Fig.3](#)).

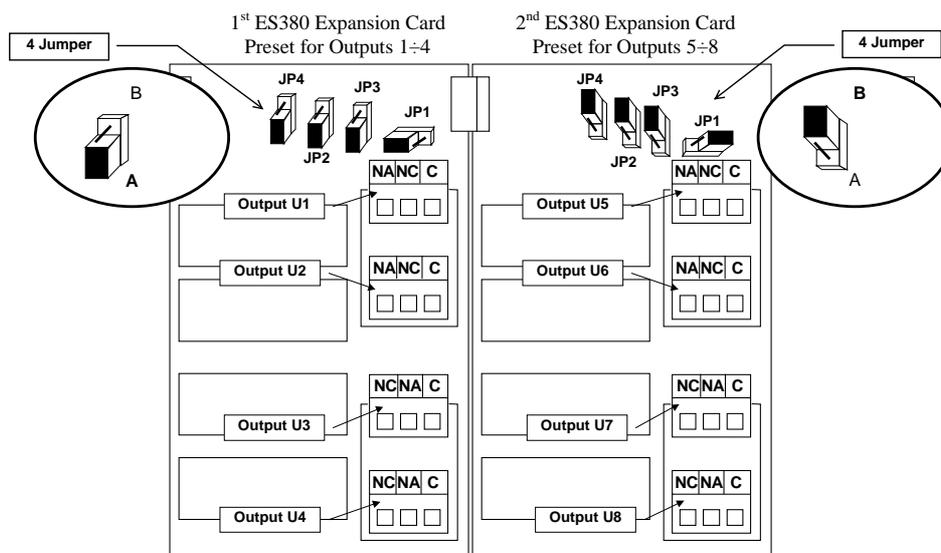
**Inputs:** All 8 inputs accept any current signal 4÷20mA coming from two ([Fig.4](#)) or three ([Fig.5](#)) wires transmitters.

## ES380UR EXPANSION CARD

**Outputs:** are all free voltage exchange contacts relay outputs. ([Fig.6](#)). Into the CE380UR two cards ES380UR can be added for a total of 8 relay outputs. Contacts carrying capacity is 3A at 250Vac.

Contacts of each relay output are indicated with “C” (common), “NC” (Normally Closed) and “NA” (Normally Open). This indication is referred to not working relays, or normally deactivated = Negative Logic.

**PAY ATTENTION:** The 1° CE380UR card has to be set with all 4 Jumper in position “A”, but the 2° has to be set moving the 4 Jumper in position “B”.

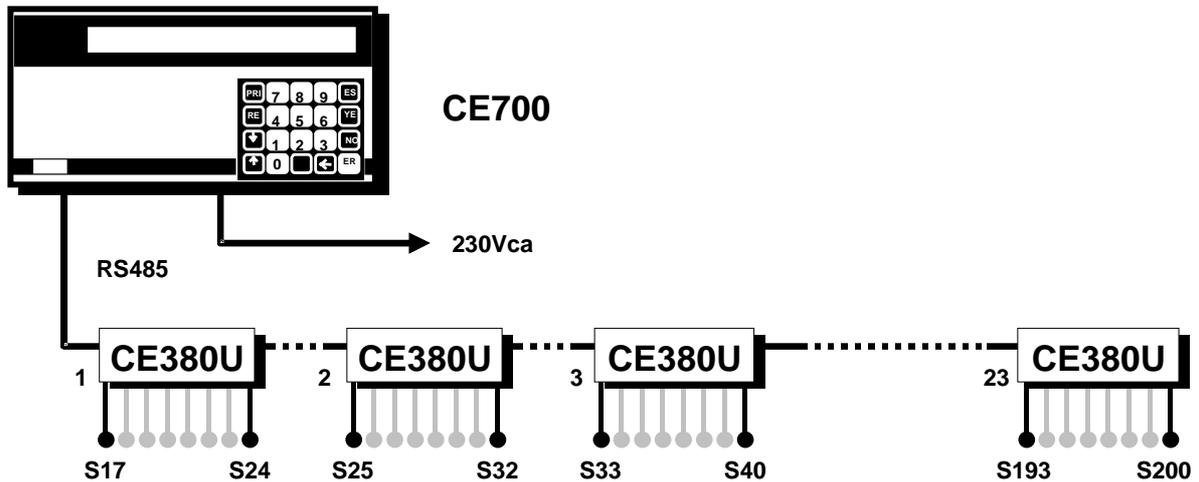


*Fig 6 - ES380 Expansion Card Relay Output*

## Connections CE380UR Remote Units to the CE700 Central System

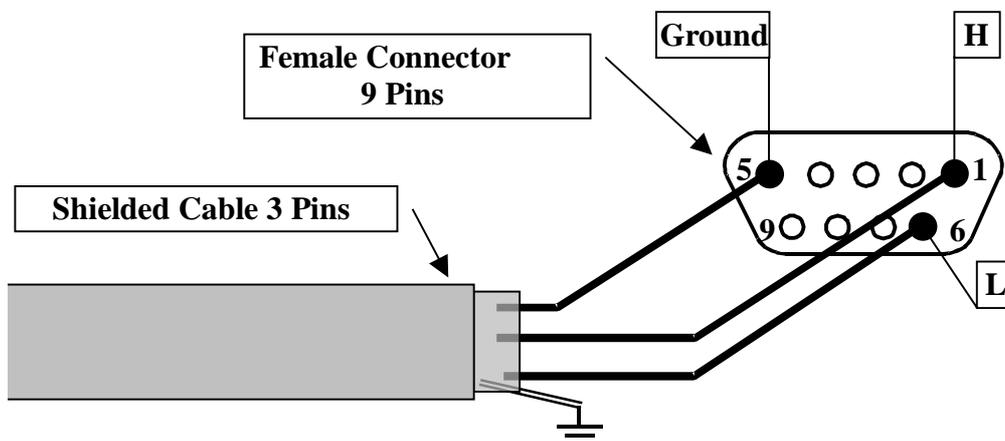
Central Systems CE700R (in Rack 19"3U) and CE700P (wall mount cubicle), can be connected to a maximum of 23 Remote units CE380UR.

The connection has to be made between the "SERIAL OUTPUT RS485" of the central system CE700 and the first remote unit CE380UR, then between the first remote unit CE380UR and the second remote unit CE380UR... and so on up to the last one.



**The cable to use must be a shielded three wires cable**, the cable section must not be inferior to 0,25 mm<sup>2</sup>. The maximum distance you can connect the last remote unit CE380UR is 1 km.

***The connection on the central system CE700*** has to be made with a female 9 Pins connector, soldering pin 1 to signal **H**, pin 6 to signal **L** and pin 5 to **Ground**.



**Addressing the CE380UR remote unit:** on the RS485 Card it is present a Dip-switch with 8 switches (**Fig.7 at Pag.8**), you can use this to define the code that allows the central system CE700 to recognize the remote unit.. The Dip-switch is normally configured as number 1. (The CE700 can control up to 23 CE380UR).

After having installed the CE380UR, the Dip-switch needs to be configured as indicated in the following table.

<b>CE380UR number</b>	<b>Dip-Switch</b>							
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>1</b>	<b>ON</b>	OFF	OFF	OFF	OFF	OFF	OFF	OFF
<b>2</b>	OFF	<b>ON</b>	OFF	OFF	OFF	OFF	OFF	OFF
<b>3</b>	<b>ON</b>	<b>ON</b>	OFF	OFF	OFF	OFF	OFF	OFF
<b>4</b>	OFF	OFF	<b>ON</b>	OFF	OFF	OFF	OFF	OFF
<b>5</b>	<b>ON</b>	OFF	<b>ON</b>	OFF	OFF	OFF	OFF	OFF
<b>6</b>	OFF	<b>ON</b>	<b>ON</b>	OFF	OFF	OFF	OFF	OFF
<b>7</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>	OFF	OFF	OFF	OFF	OFF
<b>8</b>	OFF	OFF	OFF	<b>ON</b>	OFF	OFF	OFF	OFF
<b>9</b>	<b>ON</b>	OFF	OFF	<b>ON</b>	OFF	OFF	OFF	OFF
<b>10</b>	OFF	<b>ON</b>	OFF	<b>ON</b>	OFF	OFF	OFF	OFF
<b>11</b>	<b>ON</b>	<b>ON</b>	OFF	<b>ON</b>	OFF	OFF	OFF	OFF
<b>12</b>	OFF	OFF	<b>ON</b>	<b>ON</b>	OFF	OFF	OFF	OFF
<b>13</b>	<b>ON</b>	OFF	<b>ON</b>	<b>ON</b>	OFF	OFF	OFF	OFF
<b>14</b>	OFF	<b>ON</b>	<b>ON</b>	<b>ON</b>	OFF	OFF	OFF	OFF
<b>15</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>	OFF	OFF	OFF	OFF
<b>16</b>	OFF	OFF	OFF	OFF	<b>ON</b>	OFF	OFF	OFF
<b>17</b>	<b>ON</b>	OFF	OFF	OFF	<b>ON</b>	OFF	OFF	OFF
<b>18</b>	OFF	<b>ON</b>	OFF	OFF	<b>ON</b>	OFF	OFF	OFF
<b>19</b>	<b>ON</b>	<b>ON</b>	OFF	OFF	<b>ON</b>	OFF	OFF	OFF
<b>20</b>	OFF	OFF	<b>ON</b>	OFF	<b>ON</b>	OFF	OFF	OFF
<b>21</b>	<b>ON</b>	OFF	<b>ON</b>	OFF	<b>ON</b>	OFF	OFF	OFF
<b>22</b>	OFF	<b>ON</b>	<b>ON</b>	OFF	<b>ON</b>	OFF	OFF	OFF
<b>23</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>	OFF	<b>ON</b>	OFF	OFF	OFF

**Drawings and Connection Schemes**

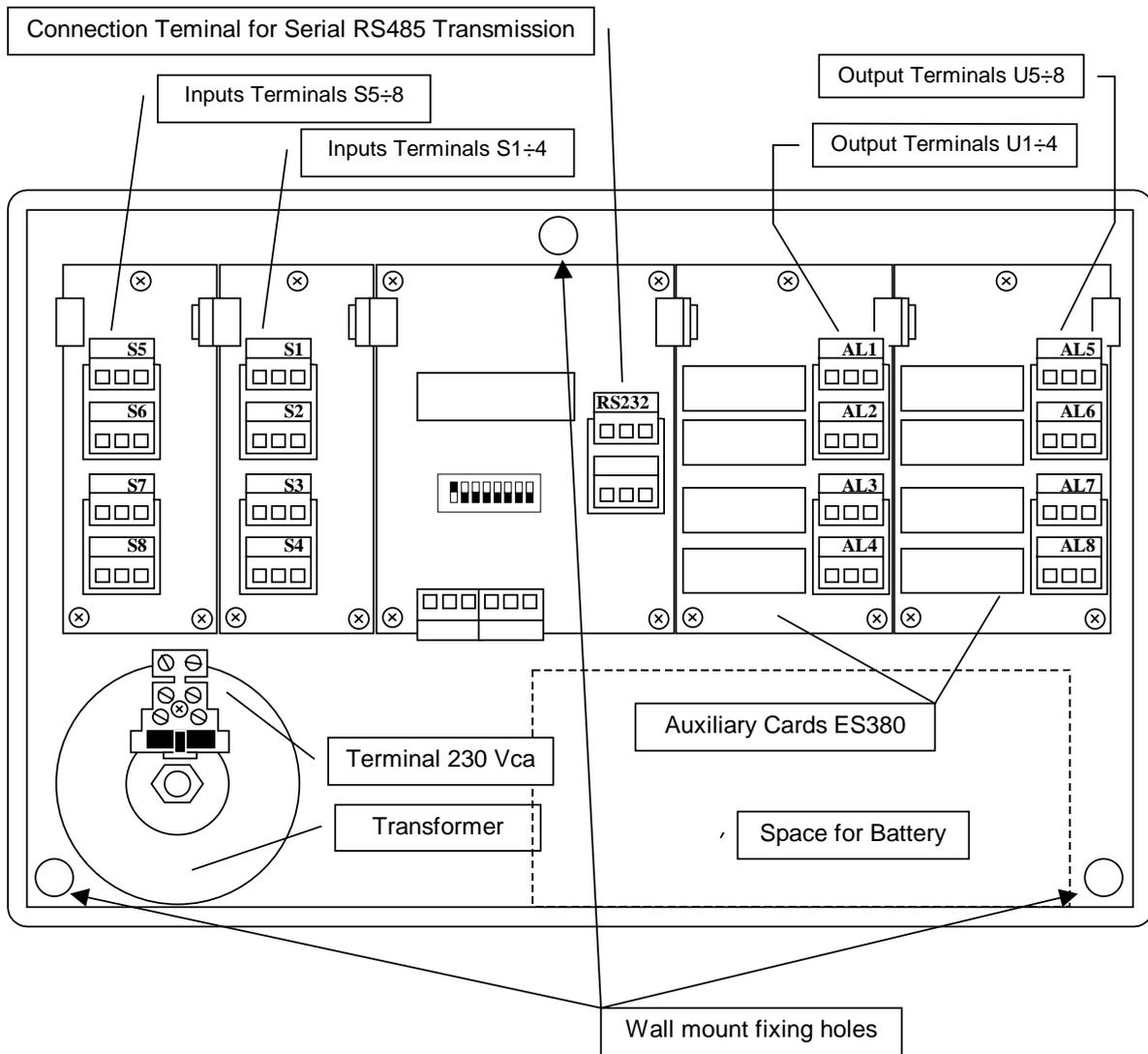
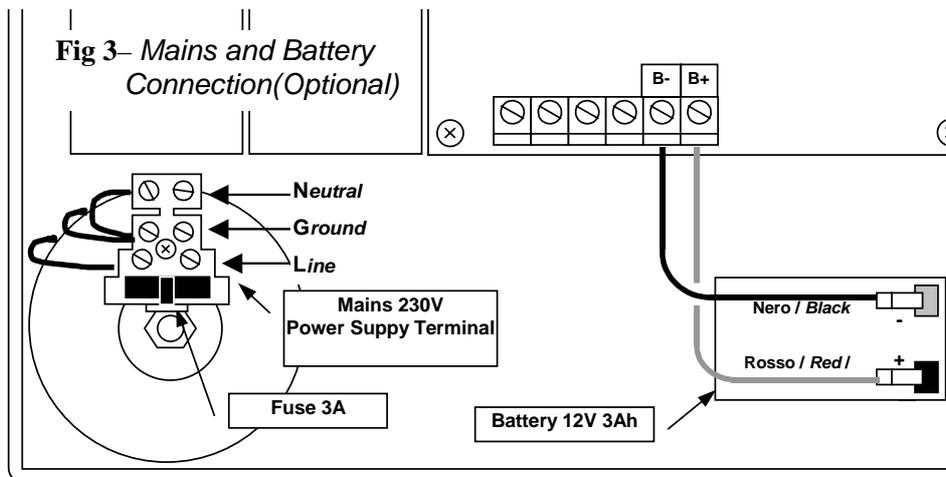
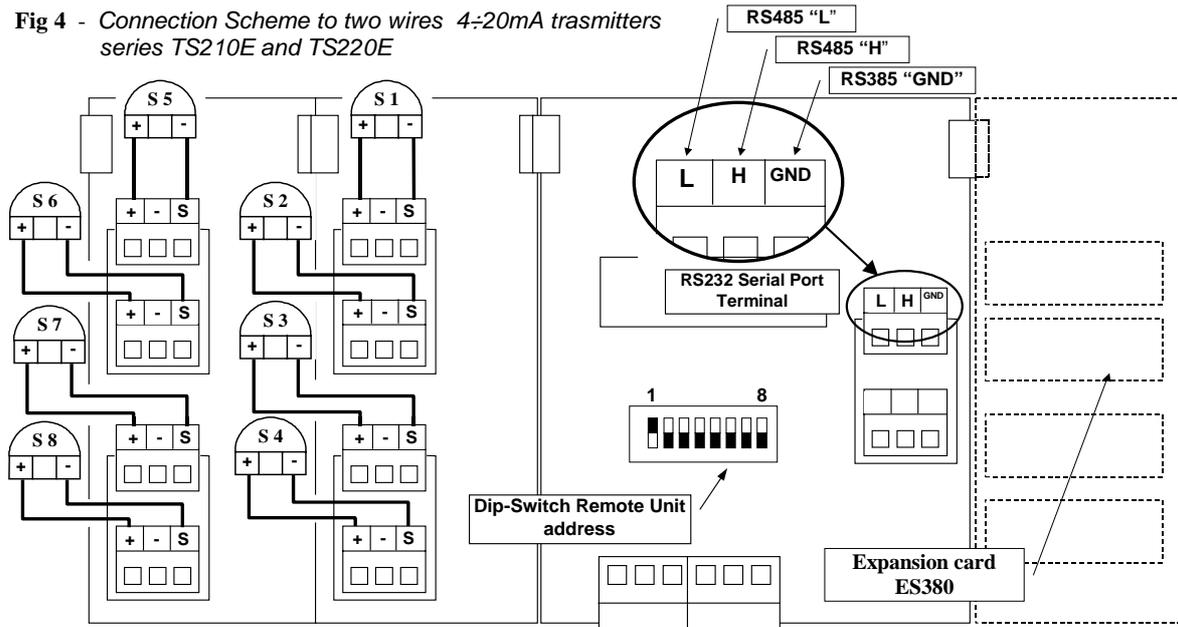


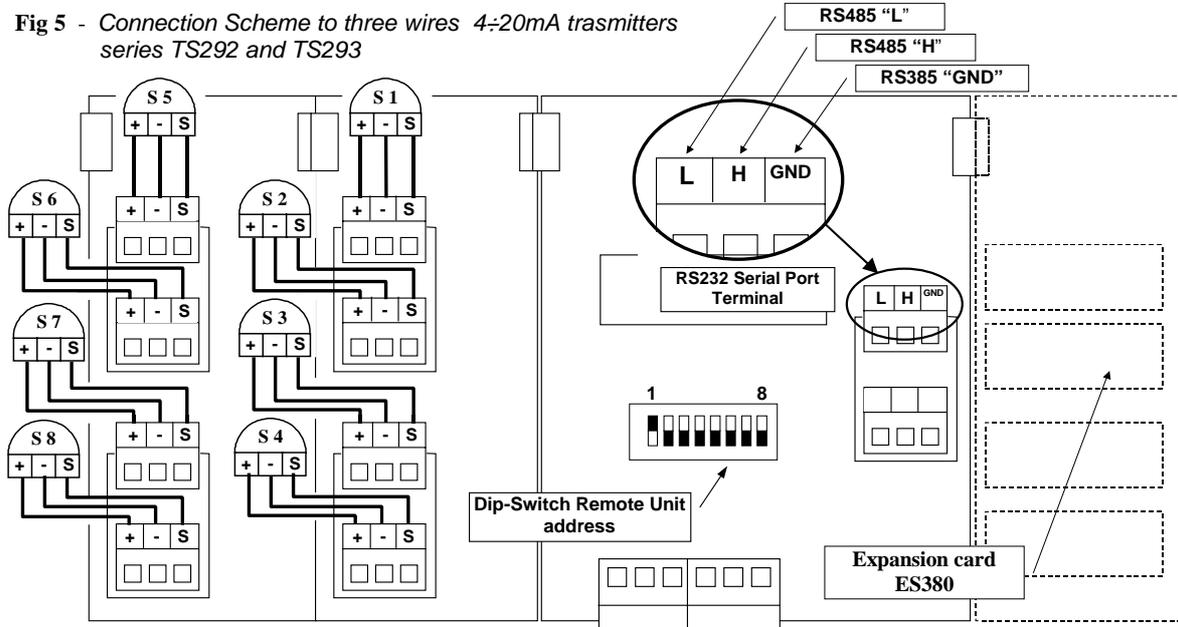
Fig 2 –Internal bottom view CE380 complete of 2 ES380



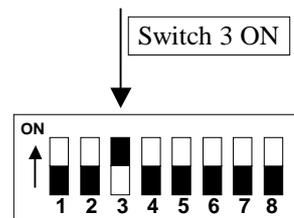
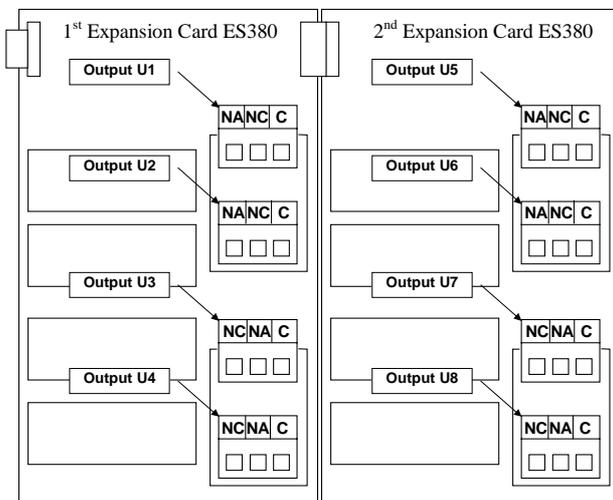
**Fig 4 - Connection Scheme to two wires 4-20mA transmitters series TS210E and TS220E**



**Fig 5 - Connection Scheme to three wires 4-20mA transmitters series TS292 and TS293**



**Fig 6 - ES380 Expansion Card Output relay Scheme**



**Fig. 7 - Dip-Switch setup example for CE380UR number 4 (Switch 3 ON) with central system CE700**

## Connection to two wires 4÷20mA transmitters

Connection to two wires 4÷20mA transmitters, is made (see Fig.5) between terminals “+” and “-” of the transmitter and relative terminals “+” and “S” of the central inputs. (from IN-1 to IN-8).

The cables section for the connection between central system and sensors must be adequate to the distance, as indicated in the Table. Transmitters series TS210E and TS220E require shielded cables. The earth braid has to be connected to the “-” of the sensor input terminal.

Sensors series TS210E and TS220E	
Distance	Cable type
From 0 to 100 meters	3x0,5 mm <sup>2</sup> Shielded
From 100 a to 200 meters	3x1 mm <sup>2</sup> Shielded
From 200 a to 500 meters	3x1,5 mm <sup>2</sup> Shielded
From 500 to 1000 meters	3x2,5 mm <sup>2</sup> Shielded

## Connection to three wires 4÷20mA transmitters

Connection to three wires 4÷20mA transmitters, is made (see Fig.6) among terminals “+”, “-” and “S” of the transmitter del trasmettitore and relative terminals of the central system input cards (from IN-1 to IN-8).

The cables section for the connection between central system and sensors must be adequate to the distance and to the sensor type, as indicated in the Table. Transmitters series TS292K, TS293K and TS293P don't require a shielded cables.

Sensors series TS292K, TS293K and TS293P	
Distance	Cable type
From 0 to 300 meters	3x1.5 mm <sup>2</sup>
From 300 to 600 meters	3X2.5 mm <sup>2</sup>

## Transmitters Use

**PAY ATTENTION:** Transmitters calibration is made with calibrated gases, sealed trimmers must NOT be tampered, they can be regulated only by technicians from our laboratory or by authorized people and using only calibrated gases.

**See Users Instructions annexes to transmitters.**

Keep in mind that transmitters series TS292K, TS293K and TS293P for flammable gases, need a warm up time, in clean air, of about 20 seconds. After this time they are able to detect gas, but they reach the optimal stability conditions after about 3 hours of continuous work; eventual test with calibrated gas have to be done after this time..

Transmitters series TS210E and TS220E reach their optimal stability condition, in clean air, after 1-2 hours of continuous work.

<b>CE380UR Remote Unit Technical Characteristics</b>	
<i>Main Power Supply</i>	230 Vac (-15/+10%) - 50 Hz ( $\pm 10\%$ )
<i>Minimum absorbed power at 230V</i>	2VA without sensors connected
<i>Maximum absorbed power at 230V</i>	10VA with 4 Sensors series TS293P
<i>(*)Maximum absorbed power at 230V</i>	16VA with 8 Sensors series TS293P
<i>Transmission data's</i>	Serial RS485 (Max. Length 1Km)
<i>Inputs</i>	4 analog Linear 4÷20 mA
<i>Internal Resistance of inputs charge</i>	200 ohm
<i>Input Power Supply (Sensors)</i>	20 Vdc (-10/+15%)
<i>(*) Output (on demand)</i>	Max n°2 ES380UR
<i>Working Temperature with Battery</i>	+5 ÷ +40 °C
<i>Buffer Battery (on demand)</i>	12 Vcc - 3 Ah (134 x 67 x 62mm)
<i>Battery Life</i>	about 3 hours with 4 Sensors (Series TS293P) (*) about 2 hours at full charge (8 Sensors series TS293P)
<i>Dimensions (L x H x W)</i>	285 x 230 x 130mm
<i>Weight</i>	about 3 Kg

<b>ES380UR (*) Output Expansion Card Technical Characteristics</b>	
<i>Outputs</i>	4 relays with Voltage free exchange contacts
<i>Relay Capacity</i>	3A (1A) - 230 Vac