Rev 1.0 del 19.01.2023

# CRV – Precision Converter to Generate 0 – 10 Vdc signal

## 1. SAFETY WARNINGS

### 1.1. Important

- Read these instructions carefully before installation.
- Before use, follow all the instructions for installation and electrical connection.
- Keep these instructions with the simulator for future reference.
- Comply with current technical and safety standards.
- The installation and start-up of the converter must be done in a workmanlike manner by a qualified operator.
- ATTENTION: IMPROPER installation can cause damage.
- DO NOT tamper with and DO NOT disassemble the simulator components; doing so voids THE WARRANTY and may cause damage.
- In compliance with safety regulations, protection against any contact with electrical parts must be ensured by correctly installing the simulator; all parts that ensure protection must be fixed in such a way that they cannot be removed without the help of a tool.
- NEVER touch the electrical parts of the circuit with power on.
- Make sure that the working conditions (temperature of use, humidity, etc.) are within the limits indicated (see point 4).
- Do not install the simulator near: heat sources, where the ambient temperature can exceed 50 ° C, places subjected to rain, humidity, dust, excessive mechanical vibrations.

## 2. DESCRIPTION of 0-10Vdc SIGNAL GENERATOR

The **CRV** converter is a simple electromechanical transducer, which generates the command signal from 0 to 10 Vdc.
It is used to simulate the signal from 0 to 10Vdc generates from a sensor with 0-10Vdc output and/or from a ratiometric transducer with 0-5Vdc output, thanks to the precision wire potentiometer and multi-turn resolution (10 turns).
The **CRV** allows you to accurately vary the value of the output signal (Vdc), applicable for the control of systems and actuators designed to receive the 0(1) – (5)10Vdc command signal, such as EC motors, inverters, shutters and motorized valves, lighting systems etc.
The **CRV** is designed for direct connection of a multimeter, to read the 0-10Vdc command signal in Vdc.

**ATTENTION**: The converter must be powered directly by the regulation system to which it is connected, with a voltage output of 10 Vdc (max 1,0 mA).

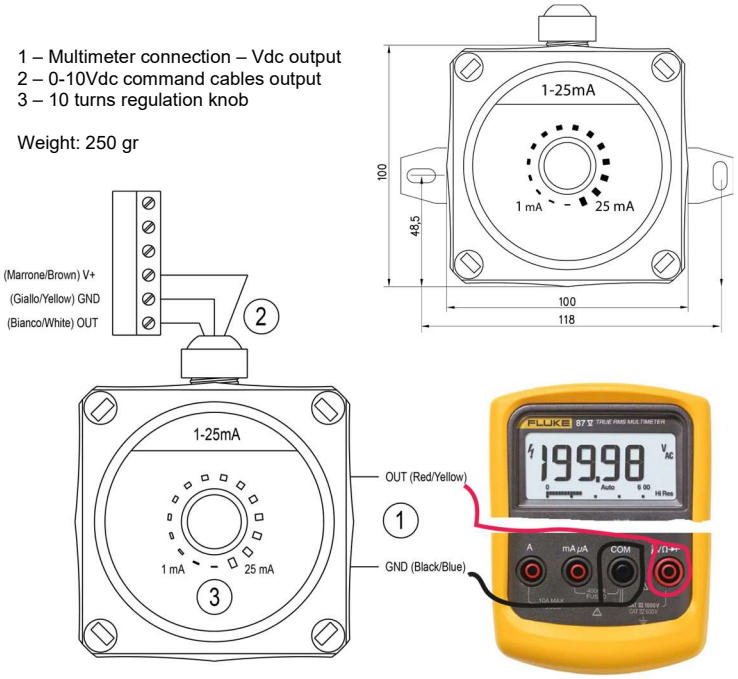
The main advantages are:

- It accurately generates the voltage command signal (0-10) Vdc to simulate the adjustment dynamic of a sensor and/or a transducer in Vdc, thanks to the 10 turn command potentiometer.
- Equipped with terminals for direct connection of a digital multimeter to read the generated value.
- Suitable for the drive of the most common analog interfaces for PLC, MCU and industrial controllers
- Simple to connect and functional for immediate use with direct reading in Vdc of the generated Vdc command.

## 3. Legend & CRV Mechanical Dimensions

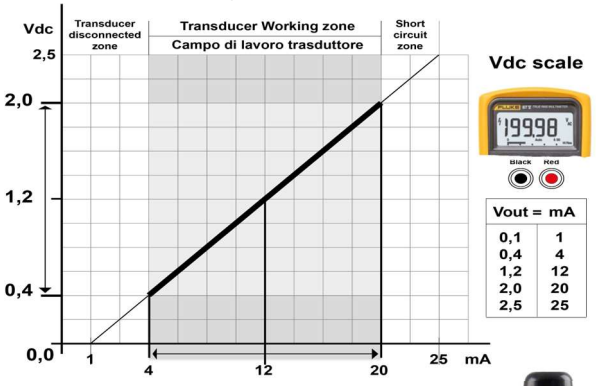
1 – Multimeter connection – Vdc output
2 – 0-10Vdc command cables output
3 – 10 turns regulation knob

Weight: 250 gr




## 4. OPERATION

### 4.1. Functional diagram of the Command 0-10Vdc




| Vout = | mA |
|---|---|
| 0,1 | 1 |
| 0,4 | 4 |
| 1,2 | 12 |
| 2,0 | 20 |
| 2,5 | 25 |

## 5. TECHNICAL DATA




**Power supply:**
Voltage: 10 Vdc (± 10%) - max. 1,0 mA

**Output Signal:**
Analogue: n°1 output 0-10Vdc

**Protection:**
Protection class: IP54

**Container:**
Material: Polycarbonate

**Environmental working conditions:**
Working Temperature: from 0 °C to 50 °C
Storage temperature: from 0 °C to 65 °C
Humidity: from 0% to 85% RH (non-condensing)
Vibration: ≤ 1 g (9.8 m/s²)

| Directives | Reference Standard | Description |
|---|---|---|
| 2006/95/UE | EN 60335-1 | Safety of household and similar electrical appliances |

The instrument must be disposed of according to local regulations on the collection of electrical and electronic equipment.

### Legend of 0-10Vdc Command CONVERTER components

**1**




**MULTIMETER Connection Terminals**:
**Red/yellow bushing =** Command signal
**Black/blue bushing =** GND
Connect the multimeter and measure the Vdc output voltage.

**2**



**Cable set for the quick connection to the regulator.**
The CRV 0-10Vdc converter is supplied already wired with the conductors as indicated in point 3, to be connected directly to the adjusting device, and to simulate the management of the 0-10Vdc command input.

**3**

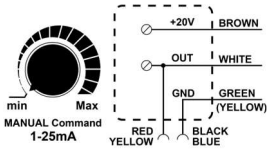



**0-10Vdc control manual command**
The converter has a 10-turn knob, which is used to finely modulate the variation of the 0-10Vdc output command.
By turning the knob clockwise, from 0 Vdc, you get an increase in the output, up to 10Vdc.
By turning the knob counterclockwise, you get a decrease in the output, up to 0 Vdc.

**4**



Terminals for the quick connection of the multimeter to the converter.
The reading in Vdc for ratiometric transducer is in chart of 4.1.



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