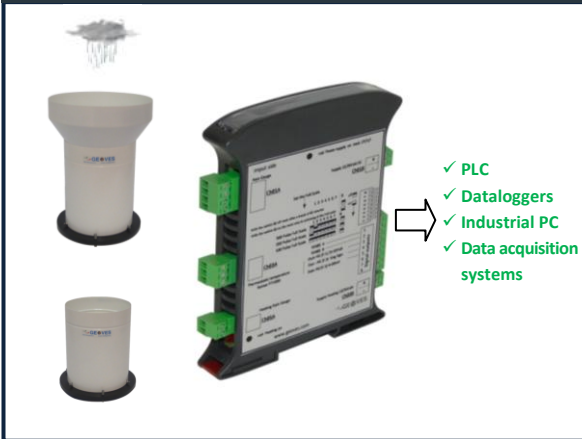


CP/VI – Analog interface for rain gauges (Rev.1 150117)



Description

CP/VI is a Cpu interface that converts a pulses signal generated from a rain gauge, in a standard analog signal **4...20mA** or **0...10Vdc** for the connection to any data acquisition system such as PLCs, dataloggers, Industrials PCs, etc...).

The output signal of the CP/VI device is **galvanically insulated** to ensure the rain gauge protection from possible external over-voltages. In this way CP/VI is particularly suitable for applications where over-voltages and lightning strikes happen frequently (e.g. industrial application, open field, etc).

Furthermore CP/VI is provided of a internal **thermostating device** for a correct management of the rain gauge heating (only for models equipped by header)

WORKING LOGIC

The CP/VI device converts the rain gauge pulses signal in an analog signal (4...20mA or 0...10Vdc) that increases proportionally with the counting of sensor pulses number. Thanks to an integrated dip-switch, CP/VI can be set to reset the pulses counting in the following ways:

1. At reaching of 100 pulses of full scale (default setting) or 250 or 500 pulses
2. After 60 minutes from the last pulse without rainfall

Example of output signal interpretation and transferring function

With set full scale of 100 impulses and rain gauge constant of 0,2mm/pulse, the rain measure value is:

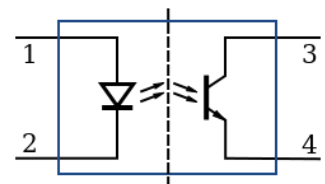
$$\text{Rain (mm)} = (V_{\text{out (mV)}} / 10.000\text{mV}) \times 0.2 \times 100 \quad (\text{with converter output } 0...10\text{Vdc})$$

$$\text{Rain (mm)} = ((I_{\text{out (mA)}} - 4\text{mA}) / 16\text{mA}) \times 0.2 \times 100 \quad (\text{with converter output } 4...20\text{mA})$$

ADVANTAGES and MAIN FEATURES

Reliability e Compatibility

- ✓ **The galvanic insulation and the stabilization of the supply voltage** block the transits of over-voltages both on the supply and on the rain gauge signals
- ✓ Using optical galvanic insulators combined with a voltage supply stabilizer/limiter, are not necessary other voltage arresters or external interfaces for the rain gauge
- ✓ CP/VI generates 2 analog outputs available in current 4...20mA or in voltage 0...10Vdc compatible with the most common PLCs and industrial data acquisition systems. Other kind of electrical outputs (eg. 0...5Vdc, 0...20mA, etc...) are available on request.
- ✓ Standardized power supply 12...24Vdc $\pm 10\%$



Integrated Thermostating

- ✓ CP/VI is equipped with a thermostat that manages automatically the heating of the rain gauge anti-icing heater (only for heated versions model RG200R and RG400R). This control occurs by measuring the temperature of an external Pt1000 sensor (not included in the CP/VI device; this sensor is included in the Geoves heated rain gauges).

Main applications

- 1) **Civil and industrial applications (first rain tank, underpasses, scrubbers, etc...)**
- 2) **Meteorological monitoring with connection DCS or Scada systems**
- 3) **Meteorological monitoring in high altitude with presence of ice or snow**

Technical Data

Model	CP/VI – Rain gauge analog converter with galvanic insulation an thermostating	
Alimentazione / Power supply voltage	12...24Vdc $\pm 10\%$	
Consumo alimentazione / Supply Current	< 30mA @ 24Vdc	
n.1 ingresso analogico con isolamento galvanico ottico / An analog input with optical galvanic insulation	5000 Vrms/1 min.	
n.1 ingresso contatore con isolamento galvanico ottico / A counter input with optical galvanic insulation	5000 Vrms/1 min.	
n.1 uscita analogica in tensione / An analog voltage output	0...10Vdc	
n.1 uscita analogica in corrente / An analog current output	4...20mA	
Carico massimo di shunt/ Maximum shunt load	250 Ω @12Vdc	
Carico massimo di shunt/ Maximum shunt load	400 Ω @24Vdc	
Carico minimo di shunt/ Minimun shunt load	10 Ω	
Gnd comune per le uscite / Gnd common for the outputs	Gnd Signal = Gnd Supply	
n.1 uscita seriale RS485 **/An RS485 serial output **	RS485 multi-drop	
Sensore di temperatura per termostato / Temperature sensor for thermostat	Pt1000 2Wires 5mt max.	
Alimentazione scaldiglia sensori per riscaldamento/ Power heater for sensor warming	+12...24Vdc 2A Max.	
Controllo automatico di riscaldamento sensori / Automatic sensor control heating	On <5°C Off >5°C $\pm 0.3^\circ\text{C}$	
Ingresso contatto pluviometro / Rain gauge contact input	F.S. 100...500 pulses	

** Only vers. 1.01

Wiring diagram

