

4~20mA FREQUENCY-TO-CURRENT CONVERTER WITOC14/min

INTRODUCTION

4~20mA current loop converter/transmitter. Used to transmit measurements to long distances with just two wires and without accuracy loss.

SENSOR INPUT

A green LED toggles On/Off to indicate sensor operation (i.e. rain gauge).

Input range: 0~14 pulses/min. Conversion factor F/I: 0.875 pulse/min/mA. Accuracy: ± 0.5 pulses. Input impedance: 1M Ω . Sensitivity: 100mV RMS (SIN position) $\dot{\eta}$ 2V peak-peak (TTL position).

SENSOR SUPPLY

+5V. Used for rain gauge or other sensor excitation.

Output voltage: 5VDC. Maximum output current: 0.5 mA. Accuracy: $\pm 1\%$.

CURRENT LOOP OUTPUT

The power supply and the instrument's output are both carried on two wires. A red LED indicator is lit when the loop supply is present.

Power Supply (Voltage difference from +24V terminal to RETURN terminal): minimum 10VDC, maximum 30VDC.

SWITCHES

- *FILTER ON/OFF switch:* activates a low-pass input filter (about 50Hz). It is used when excessive noise is present and the output signal is unstable.

- *SIN/TTL switch:* selects type of signal; **low-level AC** (SIN – suitable for MAX-40 type anemometers) or **unipolar** 0~5V (TTL – for REED based sensors).

- *PROTECTION:* From voltage surges and reverse connections.
- *ENCLOSURE:* Sealed IP65, with cable glands, 80x160x55 mm.
- *WEIGHT:* 200gr.
- *CONNECTION:* spring-loaded terminals.
- *OPERATION TEMPERATURE:* -30 $^{\circ}$ ~+70 $^{\circ}$ C
- *WARRANTY:* 1 year.



CONNECTIONS

Example: Connection to Reed-type rain gauge.

- ⇒ Voltage drop in cable: $(40\Omega/\text{km} \times 2 \times 5\text{km}) \times 20\text{mA} = 8\text{V}$
- ⇒ Voltage drop in measurement resistor: $250\Omega \times 20\text{mA} = 5\text{V}$
- ⇒ Minimum voltage drop required on WITOC terminals: 10V
- ⇒ Minimum power supply voltage: $8 + 5 + 10 = 23\text{V}$

